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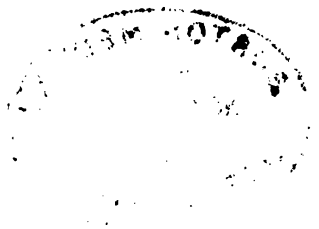

# TRANSACTIONS

OF THE

# MEDICAL ASSOCIATION

OF

# GEORGIA.

BOSTON MEDICAL LIBRARY ASS'N.

## FORTY-FIRST ANNUAL SESSION.

1890.

MACON, GEORGIA:
PUBLISHED BY THE ASSOCIATION.
1890.

CATALOGUED
NOV 13 1891
E. H. B.

"RESOLVED, That this Association shall not be considered as endorsing views of authors of papers published in connection with the Transactions, unless definitely so endorsed in the Proceedings of the Association.

"RESOLVED, That the above resolution appear annually upon the title page of our published Proceedings."

*Transactions 1873.*

J. W. BURKE & CO., Macon, Georgia.

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The next meeting of the Medical Association of Georgia will convene in the City of Augusta on the Third Wednesday in April, 1891.

# NOTE BY THE SECRETARY.

In justice to himself the Secretary desires to state that the issuing of the Transactions has been delayed from various causes, which have been beyond his control.

By vote of the Association at Brunswick the President's address was furnished the daily papers for publication. The President gave his manuscript to the publishers of the *Brunswick Times*, and I was never able to secure the address until about the 1st of August. I had despaired of getting it at all, and had gone on with the other papers, and gotten most all the material in press and run off. This accounts for the fact that the President's address in the Transactions is placed at the heel of the appendix, instead of the front, as heretofore. It is proper that I should state, in behalf of Dr. Engram, that he could never secure the original manuscript furnished the Brunswick papers, and had to rewrite his address, and that continued sickness with the Doctor delayed his doing so promptly. During all this delay the publishers, wearying with waiting, took other large contracts for printing, and, when I was ready, they were not—hence another delay.

Again, the roll of membership has to be submitted to the Treasurer every year for correction (it being his duty to drop from the roll all who are three years in arrears) and when the roll was sent over to Augusta for correction it found Dr. Goodrich absent from the city on sick furlough, and another delay of some weeks was unavoidable.

And thus, with all the push I could muster, the work has been so hindered as to make it impossible to have gotten it out earlier.

# OFFICERS.

*President:*

A. W. GRIGGS . . . . . West Point, Ga.

*Vice-Presidents:*

First—J. A. DUNWODY . . . . . Brunswick, Ga.

Second—E. W. LANE . . . . . Scarboro, Ga.

*Secretary:*

K. P. MOORE . . . . . Macon, Ga.

(Term expires 1893.)

*Treasurer:*

E. C. GOODRICH . . . . . Augusta, Ga.

(Term expires 1892.)

*Orator:*

DR. J. LINDSAY JOHNSON . . . . Cartersville, Ga.

*Board of Censors:*

S. B. HAWKINS, Americus Ga. . . . . Elected 1886.

M. H. O'DANIEL, Milledgeville, Ga. . . " 1887.

B. R. DOSTER, Blakely, Ga. . . . . " 1888.

G. W. MULLIGAN, Washington, Ga . . " 1889.

H. McHATTON, Macon, Ga. . . . . " 1890.

# ANNUAL COMMITTEES.

*Committee on Publications:*

K. P. Moore, *ex of.*, H. J. Williams, H. McHatton,
W. F. Holt, F. Walker, E. C. Goodrich.

*Committee on Necrology:*

Eugene Foster, R. J. Nunn, G. W. Holmes,
H. P. Cooper, M. H. O'Daniel.

*Committee of Arrangements:*

Eugene Foster, H. F. Campbell, E. C. Goodrich,
George C. Dugas, J. M. Hull, T. R. Wright.

*Committee on Prize Essays:*

R. J. Nunn, Robert Battey, W. A. Love,
Eugene Foster, Henry F. Campbell.

*Committee on Programme:*

Eugene Foster, J. F. Lancaster, T. M. Holmes.

*Committee on Correspondence for New Members:*

Eugene Foster, J. F. Lancaster, T. M. Holmes.

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OF THE

# Medical Association

## OF GEORGIA.

## FORTY-FIRST ANNUAL SESSION, 1890.

### FIRST DAY—MORNING SESSION.

BRUNSWICK, GA., April 16th, 1890.

The Association was called to order by Dr. J. S. Todd, the retiring President.

Prayer was offered by Rev. E. Z. F. Golden.

Dr. J. A. Dunwody, of Brunswick, Chairman of Committee of Arrangements, now introduced Col. W. E. Kay, who, on behalf of the local profession, delivered the following address of welcome:

"*Mr. President and Members of the Georgia Medical Association:*

"The local Committee of Arrangements, while fully appreciating the grand objects of your Annual Conventions to be the promotion of a spirit of progress in the various branches of the Healing Art, as well as the encouragement of fraternal intercourse, yet recognizing that an hour of recreation has been justly won, have endeavored to formulate a programme for the entertainment and pleasure of this Forty-First Meeting of your Board, which will in nowise interfere with your proper deliberations.

"In extending to you a welcome to our Fair City by the Sea, we trust that your enjoyment may be as great as the pleasure we are afforded in its dispensation.

"We feel honored in filling the roll of hosts to this eminent body of the Profession in Georgia; a profession distinguished for the philanthrophy of its calling, for its numerous deeds of charity and self-sacrificing toil for the alleviation of the suffering of afflicted humanity; and which constantly progressing in resources for mitigating all the ills to which flesh is heir, justly entitles it to the homage of a grateful public.

"To you, Gentlemen, as Members of this Profession, and in behalf of our local fraternity, I bid you welcome, yea, thrice welcome to the open portals of our hearts, our homes and the hospitality of our people."

Dr. Dunwody then introduced Col. J. W. Bennett, who delivered the following address of welcome on behalf of the citizens of the City of Brunswick:

*Mr. President and Gentlemen of the Georgia Medical Association:*

"It has unfortunately fallen to my lot to express to you in words the known welcome which our city extends your Association. You will pardon my nervousness on this occasion, when I assure you that the presence of one doctor ordinarily alarms me; two frightens me; and when I face as many as are here present to-day, I am almost paralyzed with uncontrollable dread and terror.

"To my old fogy notion the practice of making addresses of welcome is at all times, at all places and under all circumstances superfluous, unmeaning, nonsensical and tiresome, and I now venture to prophesy that ere I finish this one I will have a firm convert—such as will never fall from grace—in every single person present. I have oftentimes puzzled my limited brain machinery in a vain endeavor to divine what possible object tyranous custom had in view when she demanded its inauguration and establishment. At times I have thought she had a poor, conceited fellow to dispose of and sacrificed him in that way. But perhaps there was some wiser reason for its adoption. In my childhood days the old family negroes used to narrate to the children what we then deemed a very amusing and interesting story. It was about a rich prince of ancient times, who, being a great admirer of fools, determined to gratify this peculiar whim by personally seeing and knowing the greatest living fool of that age and time. After years of diligent search, resulting in bringing to light one hundred worthy competitors for the peculiar distinction and honor thus sought to be bestowed by the prince, one hot Summer day as he wearily trudged along the dusty road still on the search, he discovered the one hundred and first competitor. He was a fellow sitting by the road-side diligently engaged in the strange occupation of belaboring, beating and hammering and otherwise painfully injuring the shins of his own legs with a tremendous rough billet of wood, while tears of pain traced down his face. Upon being interrogated by the prince as to why he was doing this, his ready response was, "Well,

stranger, I always feel so good when it stops hurting." And such, I have sometimes thought, was the object of an address of welcome to visitors, namely, that they might the more keenly appreciate and the more highly enjoy the relief when the speech making had ended. But the local members of your Association, appreciating man's limited physical powers of endurance, have prescribed that this part of the programme be administered to you in broken doses, and as you sometimes say to your little unruly patient, it may be hard to take, but feel assured that ere you leave our city its debilitating effect upon you shall be entirely eradicated, removed and forgotten.

"I know I am not expected to give a dissertation upon the origin and progress of the science of medicine. The truth is, I am not informed on the subject. But, if I remember correctly, ancient mythology tells us of one of the first members of your noble profession, whose name I believe was Æsculapius. His career seems to have been a very short one. Having performed the miracle of curing a fellow who had been kicked by a Texas pony, Jupiter became jealous of his great power and struck him dead with a bolt of lightning, and history says that that miracle has never been again performed. From that day it is claimed by some that doctors grew scarce, and that the average longevity of human lives increased, through the days of old father Methuselah. He lived to a ripe old age and they say he resided two hundred miles from his family physician and only saw him once every three hundred years. But I trust no one will think that I really depreciate the skill of the medical profession. Such a thing is very far from my intention. From early life my best friends have been among this profession. I always enjoy their companionship, and I know too well that only the patient nursing and eminent skill of a doctor of this State once rescued me from dreaded death.

"I trust, gentlemen, that you will carefully observe the peculiarities of our city during your stay here. A year ago we had the State Agricultural Convention to meet here, and one of the first observations of one of our North Georgia friends upon seeing our unlimited expanse of marsh grass was, "Great Scott, John, look what a field of oats." Later on another was greatly distressed upon getting aboard the boat for a trip around our harbor, when he discovered that he had forgotten his linen duster. Another, upon seeing our innocent and ungainly fiddlers, thought they were yellow fever microbes and became greatly alarmed and terrified and almost caused a stampede among his companions. So, you see, one unaccustomed to the peculiarities of our section is liable to frequently err. I ask you to examine for yourselves, and when you return to your interior homes, explain to our good friends and your patients in that section that our marsh grass is not a bed of noxious miasma, and that the old giant oaks decorated with the beautful grey moss are not productive of malaria, and that they can without fear of sickness or

disease visit our sea coast in the hot Summer and be refreshed and reinvigorated by our cooling sea breezes. We only ask that when you return to your homes you tell the people there the unvarnished truth about the beauty, thrift, progress and prosperity of our city. Our people will not deceive you in their representations, although they occasionally fish, and it has been rather tersely remarked by some modern author that a man "once a fisherman, is always a liar."

"In the good old ante-bellum days the good people of this section of our State were renowned for their bounteous and warm hearted hospitality, and not infrequently in those days, the representatives of the crowned heads of the old world felt honored as guests at the palatial homes of the wealthy and accomplished rice planters of our sea coast country. The scions of these distinguished families inherited this characteristic of their ancestors and others who have made this city their home, by breathing the pure salt air wafted to them from off the restless bosom of the great father of waters, have become imbued with the same spirit. Our people are glad to have you because they are proud of their city; proud of the romantic history of the past into which it and its surroundings are intimately woven; proud of the incomparable beauty of its natural scenery; of its cooling sea breezes, of its unequaled harbor and of its health-giving artesian waters; proud of the many booms and collapses through which she has passed in bygone years; proud of the grit of her progressive men, which, in the past few years, has converted her from a dirty, sleepy hamlet into the cleanliest thriftest and most progressive city of its size in the South; and proudest of all of the unparalleled prosperity and growth which must and shall be hers in the future.

"Mr. President and gentlemen, I take it that the organizers and promoters of your Association had many praiseworthy ends in view in its establishment, such as the attaining of a more perfect knowledge of and skill in the science of medicine; the rearing to the highest possible standard the ethics of the medical profession; the pleasure and information to be acquired by the yearly social intercourse with each other, and last but not least, entitled to consideration, a few days rest and recreation for each of you from incessant daily and nightly toil, care and anxiety. If I am correct in these few conjectures, then not only our own beautiful city and its ever grateful people, but all the inhabitants of the civilized earth, who really think, and whose honest hearts throb and pulsate with the greatest of three virtues, bid you God speed in your commendable efforts. He who studies and toils year after year for the purpose of discovering a healing balm for some of the myriads of ills to which human flesh is heir to, is surpassed in the laudableness of his ambition and undertaking only by him who labors with like zeal for the eventual salvation of the immortal part of his fellowman.

"But, Mr. President and gentlemen, in addition to the fact that our

city gladly welcomes your Association for the reason that she is proud to have intelligent and reputable men to see her natural beauty and realize her many advantages, and in addition to the fact that she is always glad to contribute her mite for good purposes, she has yet another and special reason for rejoicing at this opportunity for manifesting her tender gratitude for all members of your profession. Our city has not always been so bright, healthy and prosperous as she is to-day. In the year 1876 a fatal infectious fever visited her borders, and day by day it became more prevalent and more fatal. The physicians here worked and toiled by day and by night for the relief of their suffering and dying friends, but nearly all of these worked under disadvantage, never before having been through an epidemic of yellow fever. The angel of death hovered around and about almost every home of the afflicted city, and ever and anon each day, he called for and carried away a loved one from some family. The well were too few to nurse the sick and bury the dead. Hopeless gloom and despair enshrouded this entire city. It was then in her hour of greatest need and distress that members of your profession, influenced by nothing save only sympathy for their suffering fellowmen, voluntarily tendered their professional skill, and coming here, braved disease and death for the relief of the sick and dying. The people of bright, happy and prosperous Brunswick of to-day would indeed be "marble-hearted fiends," were they forgetful of those brave and noble men of your profession. With tenderest and warmest gratitude for those who thus served our city, and with an earnest wish that each of you may enjoy your stay with us, in the name and in behalf of our city, I welcome you and bid you make yourselves at home."

On behalf of the Association, Dr. Eugene Foster, of Augusta, very happily responded to these addresses of welcome.

The retiring President, Dr. Todd, now delivered in a very graceful manner the following official farewell:

"*Gentlemen of the Medical Association of Georgia:*

"I would do violence to my feelings if I did not again thank you for the high honor you conferred upon me a twelve month since, in electing me as your President. You will pardon me for again assuring you that your kindness, urbanity and forbearance toward me during my term of office has been greatly appreciated. The occasion that prevents Dr. Holmes, the President Elect, from taking charge of the meeting, is too well known to every one of you, and is too painful to more than mention. I am sure, however, that the Association will find an exemplification of its wisdom in having selected, as its Vice-President, Dr. Engram, a country doctor, one of those who are the very best among us;

men ready for any and every emergency; whose minds are not dwarfed by essaying to learn everything about something, but who, with a broadened and expanded intellect, have taken in medicine in all its extended phases, by learning something about everything. You will not forget that Jenner, McDowell, Crawford, Long and Koch, were humble country practitioners; a galaxy of bright stars which will be called by the scientific world for all time to come, the constellations, vaccination, ovariotomy, anesthesia and bacteriology. Surely no set of men have given to humanity so much. But I will not detain you longer from the pleasure of hearing Dr. Engram, whom I now introduce."

Dr. R. O. Engram, of Montezuma, the First Vice-President, who, in the absence of Dr. J. B. S. Holmes, the President, now assumed the official gavel, and proceeded to deliver a very interesting address upon "Food." [See Appendix.]

Dr. Engram now announced the Association ready for business.

The Committee on Programme made the following report, which, after some discussion as to the time allowed members to discuss the various papers, was adopted:

PROGRAMME:

WEDNESDAY, APRIL 16th, 1890.

1. Meeting called to order at 10:30 A. M., promptly, by retiring President, Dr. J. S. Todd, Atlanta, Ga.
2. Prayer by ———
3. Address of Welcome in behalf Brunswick, by———
4. Response, by Dr. G. W. Mulligan, Washington, Ga.
5. Address by President, Dr. J. B. S. Holmes, Rome, Ga.
6. Report of Committee on Programme.
7. Announcing Members of Board of Censors.
8. Applications for Membership.
9. Report of Secretary.
10. Report of Treasurer.
11. Adjournment.

In the afternoon the Association will be entertained by the local committee in an Excursion around the Harbor, spiced with a Clam Bake and Oyster Roast.

THURSDAY, APRIL 17th, 1890.

1. Meeting to be called to order at 9 o'clock, A. M., promptly.
2. Reading of Minutes.
3. Applications for Membership.
4. Report of Board of Censors.
5. At 10 o'clock, A. M., Reading of Paper, by Dr. S. C. Benedict, Athens, Ga., "Aseptic vs. Antiseptic Surgery." Leaders in Discussion of this paper: Drs. Henry F. Campbell, W. F. Westmoreland, Robert Battey, Eugene Foster, W. F. Holt.
6. At 11 o'clock, A. M., Reading of Paper by Dr. H. McHatton, Macon, Ga., "Railroad Surgery." Leaders in Discussion of this paper: Drs. T. M. Holmes, W. P. Nicholson, A. P. Taylor, P. L. Hillsman, W. F. Westmoreland, Jr.
7. At 12 o'clock M., Orator's Address, by Dr. W. F. Westmoreland, Jr., Atlanta, Ga.
8. Adjournment, after Orator's Address.
9. Meeting to be called to order promptly at 3:30 o'clock, P. M.
10. Appointment of Nominating Committee.
11. Applications for Membership.
12. At 4 o'clock, P. M., Reading of Paper by Dr. K. P. Moore, Macon, Ga., "The Female Urethra, a source of trouble liable to be over-looked in our gynæcological investigations." Leaders in Discussion of this paper: Drs. J. G. Earnest, W. A. Love, V. O. Hardin, G. H. Noble, R. J. Nunn.
13. At 5 o'clock, P. M., Reading of Paper by Dr. G. H. Noble, Atlanta, Ga., "Hyperæsthetic Endometritis." Leaders in Discussion of this paper: Drs. J. W. Bailey, Robert Battey, M. J. Hatch, K. P. Moore.
14. At 6 o'clock, P. M., Reading of Paper by Dr. J. M. Hull, Augusta, Ga., "Rare Experience with Erysipelas in Eye Surgery." Leaders in Discussion of this paper: Drs. S. B. Hawkins, W. S. Elkins, B. R. Doster. W. O'Daniel.

FRIDAY, APRIL 18th, 1890.

1. Meeting to be called to order promptly at 9 o'clock, A. M.
2. Reading of Minutes.
3. Report of Nominating Committee.
4. Report of Committee to Audit Treasurer's books.
5. Report of Committee to Audit Secretary's books.
6. At 10 o'clock A. M., Reading of Paper by Dr. H. J. Williams, Macon, Ga., "The Importance of Chemical and Microscopical Examination of the Urine." Leaders in Discussion of this paper: Drs. G. W. Mulligan, H. Burford, W. D. Bizzell, H. McHatton, R. J. Nunn.
7. At 11 o'clock, A. M., Reading of Paper by Dr. R. O. Cotter, o Macon, Ga., "Progress of Ophthalmology and Rhinology." Leaders in

Discussion of this paper: Drs. J. M. Hull, A. W. Calhoun, F. M. McIntosh.

8. At 12 o'clock, M., Reading of Paper by Dr. A. C. Davidson, Sharon, Ga., "Cardiac Neurasthenia." Leaders in Discussion of this paper: Drs. J. F. Lancaster, A. W. Griggs, J. S. Todd, J. A. Dunwody.

9. Adjourn at 1 o'clock, P. M.

10. Meeting called to order at 3:30 o'clock, P. M.

11. Reading of Paper by Dr. R. O. Engram, Montezuma, Ga., "Stricture of Male Urethra and some forms of Neuroses." Leaders in Discussion of this paper: Drs. T. O. Powell, W. D. Bizzell, J. M. Gaston, S. C. Benedict.

12. At 4:30 o'clock, P. M., Reading of Paper by Dr. J. A. Butts, Brunswick, Ga., "Climate of Brunswick, Ga." Leaders in Discussion of this paper: Drs. A. C. Blain, P. R. Cortelyou, J. C. LeHardy.

13. Unfinished Business.

14. New Business.

15. Adjournment.

REGULATIONS.

No member can consume more than twenty minutes in reading a paper, and those discussing a paper will be limited to five minutes each.

While the Committee on Programme has appointed members to discuss papers, any member has the right to join in the discussions. Nor does this programme bar any member from presenting a voluntary paper.

If you are to read a paper, don't forget the following law, governing the subject:

"No paper shall be read before this Association, by title or otherwise, until a complete copy of such paper shall have been placed in the hands of the Secretary for publication in the Transactions."

Please carefully examine the programme, and if your name is down to read a paper, or lead the discussion of one, be on hand at the time it is to be read.

In order to keep full meetings the Nominating Committee is requested to meet at night, second day.

The Association will meet daily at 9 o'clock A. M.; adjourn at 1 o'clock, P. M.; assemble at 3:30 o'clock, P. M.; adjourn at 7 o'clock, P. M.

EUGENE FOSTER, M. D.,
T. M. HOLMES, M. D.,
J. F. LANCASTER, M. D.,
*Programme Committee.*

The President appointed Drs. A. W. Griggs and J. S. Todd to fill temporary vacancies on the Board of Censors.

Application for membership was made by the following gentleman and referred to the Board of Censors:

Drs. P. S. Clarke, Darien, Ga.; Spalding Kenan, Darien, Ga.; W. F. Sibbett, Broxton, Ga.; J. G. Hopkins, Thomasville, Ga.; James C. Bloomfield, Athens, Ga.; W. C. Wimberly, Fort Gaines, Ga.; W. A. Baldwin, Cuthbert, Ga.; L. H. Jones, Atlanta, Ga.; L. B. Kennedy, Atlanta, Ga.; John K. Maloy, Temperance, Ga ; W. B. Tate, Tate, Ga.; Roy J. Chappel, Dublin, Ga.; J. L. Weaver, Eatonton, Ga.; Arthur C. Blain, Brunswick, Ga.; Chas. D. Hurt, Columbus, Ga.; T. J. Bridges, Cabaniss, Ga.; W. C. Humphries, Acworth, Ga.

A committee consisting of Drs. J. S. Todd, Eugene Foster and A. G. Whitehead, was appointed to send a telegram to Dr. J. B. S. Holmes, the Association's beloved President, expressing to him the sympathy, condolence and support which we feel for him in the severe ordeal through which he is now passing.

The Secretary now made the following report, which was referred to an Auditing Committee composed of Drs. Calhoun, Mulligan and Whitehead:

*To the President and Members of the Medical Association of Georgia:*

"I have the honor to submit herewith my annual report for the year 1889. The total receipts coming into the hands of the Secretary amounted to $463.50. Total disbursements $462.00. An itemized statement with proper vouchers accompanies this report. Three hundred volumes of the Transactions were issued at a total cost of $372.60. Considering the character of the work, we feel gratified at the cost, and think that the publishers, Messrs. J. W. Burke & Co., have reflected credit upon themselves. Respectfully submitted, K. P. MOORE, *Secretary.*

SECRETARY'S REPORT.

*K. P. Moore in Account with the Georgia Medical Association.*

| 1889. | | DR. | |
|---|---|---|---|
| April | 20th—To dues L. G. Hardman | $ | 3 00 |
| May | 10th—To sale of Transactions | | 1 25 |
| June | 2d—To sale of Transactions | | 1 25 |
| Aug. | 5th—To cash from C. D. Hurt | | 5 00 |
| | Dues from Dr. J. A. Butts | | 3 00 |
| | Cash from Treasurer | | 450 00 |
| | Total debit | $ | 463 50 |

| 1889 | | Cr. | |
|---|---|---|---|
| April | 18th | By Telegram to Dr. Bailey (order of Association) | $ 75 |
| May | 4th | By Postage Stamps | 3 00 |
| May | 5th | By Stationery, (Voucher No. 1) | 1 15 |
| May | 10th | By Stamps | 1 00 |
| Aug. | 1st | By Stamps | 1 00 |
| Aug. | 23d | By Stamps | 7 50 |
| Sept. | 6th | By Stamps | 35 00 |
| Sept. | 7th | By Stamps | 1 50 |
| Oct. | 2d | By Account J. W. Burke & Co., (Voucher No. 2) | 386 10 |
| Nov. | 30th | By Postage | 2 75 |
| Dec. | 20th | By Postage | 2 75 |
| 1890. | | | |
| March | 13th | By Postage | 7 50 |
| April | 10th | By Printing, G. F. Wing, (Voucher No. 3,) | 20 70 |
| April | 11th | By Express of Books, Quarterman, (Voucher No 4) | 30 |
| April | 11th | By Postage | 1 00 |
| | | Total credit | $462 00 |

The Treasurer, Dr. E. C. Goodrich, stated that all the papers, accounts, etc., connected with his office had been delayed with his baggage, in transitu, and he asked to be allowed until to-morrow to make his report, which was granted.

[Dr. Dunwody, extended, on the part of the local profession of Brunswick, an invitation to a boat ride on the "Pope Catlin," around the harbor. The invitation was most cordially extended, not only to the members of the Association, but to an unlimited number of their lady friends. This excursion gave the Doctors of Georgia an opportunity to see the magnificent Harbor of Brunswick, fringed for miles with large ships from all over the civilized world. The ride of two hours around the Harbor and down the bay was intensely enjoyed by every one, and the bracing sea breezes, together with the pleasant social intercourse, whetted to a very keen edge the appetites of all, and the Association enjoyed to the fullest extent the elegant Chowder, Clam-bake and Oyster Roast which awaited them at St. Simon's Island. This

excursion and entertainment was one of the most enjoyable the Association has ever had, and formed quite a pleasant episode in its history.]

Letters and telegrams expressing regrets at inability to attend this Session of the Association were read from Drs. J. B. S. Holmes, J. R. Humphries, P. R. Cortelyou, S. B. Hawkins, R. J. Nunn, and W. B. Wells.

The Association now adjourned to meet to-morrow morning at 9 o'clock.

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## SECOND DAY—MORNING SESSION.

BRUNSWICK, GA., April 17th, 1890.

The Association was called to order at 9 o'clock, A. M., Dr. R. O. Engram, Vice-President, in the Chair. Minutes of yesterday read and confirmed.

It was moved and carried, that a copy of the President's address be furnished the Press of Brunswick for publication.

The following applications for membership were received and referred to the Board of Censors:

Drs. J. M. Spence, W. W. Bacon, B. Atkinson, R. G. Bryans, Harris Branham, M. L. Currie, L. B. Botsford, J. M. Bishop, Sidney Lanier, J. E. McMillen, M. P. Williams.

Dr. Virgil O. Harden now read a paper entitled, "Two Cases of rare Ovarian Tumors. [See Appendix.]

Dr. Benedict next read a paper on "Aseptic vs. Antiseptic Surgery." [See Appendix.]

The next paper on the programme was that of Dr. H. McHatton, on "Railroad Surgery." [See Appendix.]

The hour for the annual oration not having arrived, and there being nothing on the programme, for this moment, Dr. Gaston occupied the time with the report of the following case:

"A gentleman about thirty-two years old was attended in consultation during the Summer of 1888, who presented symptoms of acute psoas abscess with high fever for several days. The pain was limited to the right iliac region and the right lumbar region. After a time there developed a well marked prominence in front of the right kidney and extending forward above the crest of the ilium into the iliac region. There was in the meantime febrile excitement alternating with chilliness and great tenderness upon pressure, with a sense of deep fluctuation on palpation over the prominence. With these indications of a psoas abscess, it was thought proper at the expiration of a week from my first visit to make an opening for its evacuation. But upon going on the following day with two colleagues and a brother of the patient, it was found that the prominence had disappeared and there was no evidence of fluctuation where it had previously existed. Instead of making the incision as intended, an exploratory puncture with the handle of an aspirator was made at the most salient latent aspect of the right lumbar region about midway between the false ribs and the crest of the ilium. It passed through a dense membrane into a cavity without any discharge by suction, and it was then evident that the abscess had found an outlet into the colon where it lies in contact with the muscles. On the following morning there were five evacuations from the bowels, as there had been frequently during the previous week, yet it was stated that a physician who was called to the case subsequently, treated the patient for forced impaction and attributed the previous disorder to constipation of the bowels.

"The patient afterwards returned to Jacksonville, Fla., where he was under the treatment of Dr. R. B. Burroughs for local trouble in the lumbar and iliac regions. He, being unable to attend to his duties as train dispatcher, returned to his home in Illinois, and sought the services of Dr. C. T. Parks, of Chicago, who made an incision over the dorsum of the right ilium about two inches below the crest. This eventually closed and a swelling occurred between the cicatrix and the sacrum, which pointed and broke spontaneously into the line of the incision, from which a purulent discharge has continued for several weeks up to this time. The examination with a probe in the presence of several colleagues this morning, reached a fistulous track extending from near the sacro-iliac symphysis; and the opinion expressed by those present was that the pus resulted from some carious bone in that vicinity, calling for an operation.

"With a view to elicit the judgment of others having experience in similar cases, any member of the Association who may be interested in this matter are invited to examine the patient after the close of the morning session."

**Dr. Gaston reports a corroboration of the previous opinions by those who made the subsequent examination.**

The hour of 12 o'clock, M., being the hour for the Annual Oration, Dr. W. F. Westmoreland, Jr., was introduced by the President, and delivered quite an interesting and instructive address upon "The Surgery of the Past, Present and Future." [See Appendix.]

Communications expressing regrets at inability to attend, were read from Drs. A. C. Davidson, T. M. Holmes, W. D. Bizzell and R. C. Word.

The Treasurer submitted the following report, which was referred to the Committee appointed to audit the Secretary's books.

TREASURER'S REPORT.

*To the Medical Association of Georgia:*

GENTLEMEN—I beg leave to submit my report for the year ending April 16th, 1890, as follows:

DR.

| | |
|---|---|
| By amount in Treasury as per last report | $ 482 53 |
| Collected during the year | 717 00 |
| | $1,199 53 |

CR.

| | |
|---|---|
| By amount paid out during the year as per accompanying vouchers | $ 651 40 |
| Leaving a balance in Treasury of | $ 542 13 |

There is still quite an amount of unpaid back dues, which I am trying to collect, and will probably get the most of it. If the members will only aid me by promptly paying their dues when called upon, my labors would be much lighter, and the Association be always on a cash basis. We are now issuing the Transactions without the insertion of advertisements, which I think we will all agree is a great improvement.

Respectfully submitted,

E. C. GOODRICH, *Treasurer.*

The Association now adjourned till 3:30 o'clock P. M.

## SECOND DAY—AFTERNOON SESSION.

The Association was called to order at 3:30 o'clock P. M., Dr. R. O. Engram in the Chair.

Application for membership was read from Dr. Gustavus P. Folks, and referred to Board of Censors.

Dr. Bullard now presented a voluntary paper, entitled, "Fibro-Sarcoma—The advisability of its Removal," and exhibited the patient, whose case formed the basis of his paper. [See Appendix.]

Next on the Programme came a paper by Dr. K. P. Moore, entitled, "The Female Urethra, a source of trouble liable to be overlooked in our Gynæcological Investigations." Dr. J. G. Earnest lead in the discussion of this paper, followed by Dr. V. O. Harden. [See Appendix for paper and discussion.]

The Secretary next read a paper sent by mail, from Dr. A. C. Davidson, the title of which was, "A Unique Case of Senile Gangrene, followed by a Bloodless Operation without Tourniquet or Ligature." Drs. Westmoreland, Jr., and Carter discussed this paper. [See Appendix for paper and discussion.]

The next on the Programme was a paper by Dr. H. J. Williams, of Macon, entitled, "The Importance of Chemical and Microscopical Examination of the Urine." This paper was read by Dr. H. McHatton, in the absence of Dr. Williams, and was discussed by Drs. Todd, McHatton, Duncan, Griggs and Doster. [See Appendix for paper and discussion.]

The Nominating Committee was appointed as follows:

Drs. A. G. Whitehead, Burke; C. C. Hart, DeKalb; D. E. Gray, Emanuel; Roy. J. Chappell, Laurens; Jno. K. Maloy, Telfair; P. H. Comas, Appling; T. F. Bridges, Monroe; Geo. H. Stone, Chatham; L. L. Lawrence, Jones;

E. W. Lane, Screven ; S. C. Benedict, Clarke ; J. L. Walker, Ware ; J. M. Kelly, Spalding ; W. B. Tate, Pickens ; Sidney J. Lawrence, Effingham ; M. L. Currie, Montgomery ; W. C. Humphries, Cobb ; M. A. Baldwin, Randolph ; H. McHatton, Bibb ; C. H. Richardson, Macon ; P. S. Clark, McIntosh ; G. W. Mulligan, Wilkes ; J. L. Sellman, Douglass ; P. L. Hillsman, Dougherty ; J. F. Lancaster, Butts ; A. W. Griggs, Troupe ; T. J. Bridges, Monroe ; C. J. Carter, Lowndes ; J. B. Pendergrass, Jackson ; Eugene Foster, Richmond ; J. H. Crozier, Early ; J. H. Grierson, Bartow ; W. F. Sibbett, Coffee ; A. T. Taylor, Thomas ; J. A. Butts, Glynn ; W. L. Bullard, Muscogee ; Mark O'Daniel, Baldwin ; W. F. Westmoreland, Fulton ; W. O. Dobbins, Clay.

The Association adjourned to meet at 9:30 o'clock, A. M., to-morrow.

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## THIRD DAY—MORNING SESSION.

BRUNSWICK, GA., April 18th, 1890.

The Association was called to order at 9:30 o'clock, A. M., Dr. J. S. Todd in the Chair. Minutes of the previous day read and confirmed.

The presiding officer announced that Dr. J. B. S. Holmes, the President, had appointed as the next Annual Orator, Dr. J. Lindsay Johnson, of Cartersville.

The following gentlemen were appointed delegates to the American Medical Association :

Drs. J. S. Todd, K. P. Moore, J. G. Hopkins, Wm. O'Daniel, Eugene Foster, R. O. Cotter, A. G. Whitehead, T. M. McIntosh, Geo. C. Dugas, E. W. Lane, A. W. Calhoun, Virgil O. Hardin, Geo. H. Stone, Wm. Duncan, J. A. Dunwody, J. A. Butts, S. B. Hawkins, T. O. Powell, J. H. Heard, E. C. Goodrich, J. McF. Gaston, P. R. Cortelyou, J. G. Green,

J. B. S. Holmes, Robt. Battey, H. F. Campbell, J. F. Lancaster, R. O. Engram, J. M. Hull, DeSassueur Ford, W. B. Tate, W. O. Dobbins, and J. M. Kelley.

The Committee appointed to examine and audit the Secretary's and Treasurer's books and accounts, made the following report:

REPORT.

BRUNSWICK, GA., April 17th, 1890.

*To the Medical Association of Georgia:*

We, your Committee, appointed to examine the Secretary's and Treasurer's books, make the following report: We find both neatly and accurately kept, and all expenditures supported by proper vouchers. The Treasurer has in hand $542.13.

A. W. CALHOUN,
G. W. MULLIGAN,
A. G. WHITEHEAD,
*Committee.*

The paper of Dr. R. O. Cotter, of Macon, entitled, "A Report on the Progres of Ophthalmology and Rhinology," being next on the programme, that gentleman came forward and read his paper. Dr. Calhoun being the only one present who had been appointed to discuss Dr. Cotter's paper, now lead in the discussion. [See Appendix for paper and discussion.]

Secretary next read a friendly communication from Dr. J. R. Fritts, Corresponding Secretary of the Missouri State Medical Society, as follows:

MISSOURI STATE MEDICAL ASSOCIATION.

OFFICE OF CORRESPONDING SECRETARY

MEXICO, MO., April 8th, 1890.

*King P. Moore, M. D., Macon, Ga.:*

DEAR DOCTOR—This is to extend a fraternal greeting to the profession of Georgia, by the brotherhood of Missouri, wishing them a pleasant meeting, and a continuance of their valuable addition of papers to the profession and of their enviable reputation; and to extend an invitation that you send delegates to our Association, which meets on 6th, 7th and 8th of May, at Excelsior Springs. The arrangements now being consummated, promise a pleasant and profitable meeting.

Yours fraternally, J. R. FRITTS,
*Corresponding Secretary.*

Moved and carried that the Secretary of this Association acknowledge the receipt of the letter and to extend like courtesies to the Missouri State Medical Association.

The report of the Nominating Committee being called for, the following nominations were made and unanimously accepted by the Association :

For President, Dr. A. W. Griggs, West Point, Ga.; First Vice-President, Dr. J. A. Dunwody, Brunswick, Ga.; Second Vice-President, Dr. E. W. Lane, Scarboro, Ga.; Censor, Dr. H. McHatton, Macon, Ga.

Place of next meeting, Augusta, Ga.

The President appointed the following Committee of Arrangement for the next session of the Association:

Dr. Eugene Foster, Chairman, Dr. H. F. Campbell, Dr. E. C. Goodrich, Dr. Geo. C. Dugas, Dr. J. M. Hull, Dr. T. R. Wright.

Dr. J. A. Butts next presented a synopsis of his paper on "The Climatology of Brunswick," and promised the manuscript in time for the Transactions.

Dr. J. S. Todd lead in the discussion of Dr. Butt's paper. [See Appendix for paper and discussion.]

Next on the programme came the paper by Dr. R. O. Engram, of Montezuma, on "Stricture of the Male Urethra and Forms of Neuroses," which paper was read by the Secretary and discussed by Dr. Gaston. [See Appendix for paper and discussion.

Application for membership was made by Dr. A. A. Rowland, of Brunswick, and referred to the Board of Censors. The Board of Censors after considering each application during this session reported favorably upon them all, and they were elected to membership. Hence an accession of thirty-six new members during this session of the Association, the

largest within the history of the Association. Following is a list of their names:

Drs. W. W. Bacon, J. M. Spence, Roy J. Chappell, J. L. Weaver, Arthur C. Blain, T. J. Bridges, W. C. Humphries, J. G. Hopkins, Louis H. Jones, M. A. Baldwin, W. C. Wimberly, Chas. D. Hurt, John K. Maloy, Wm. B. Tate, L. B. Kenedy, Jas. C. Bloomfield, P. S. Clark, Spalding Kenan, W. F. Sibbett, R. E. L. Burford, S. S. Mathews, S. Latimer Phillips, S. E. Brown, Gustavus P. Folks, A. A. Rowland, O. W. Tucker, W. P. Williams, J. E. McMillan, Sidney J. Lanier, J. N. Bishop, L. B. Botsford, M. L. Currie, Harris M. Branham, R. G. Bryans, B. Atkinson.

Dr. Foster, on behalf of the committee appointed at the last session to go before the Legislature to ask for the creation of a State Board of Health, reported that the committee had presented to the Legislature the bill adopted by the Association, and asked that the Legislature pass the bill. They had not only asked the favor of the Legislature, but had sought and besieged by every honorable means to secure its passage, but had utterly failed to convince that august body of the necessity or utility of such a measure, and hence their work was a failure. The committee asked to be discharged, which was done.

The President appointed the same Committee on Programme for the next year, consisting of Drs. Eugene Foster, Chairman, J. F. Lancaster and T. M. Holmes.

Also the same Committee on Publications were continued for another year, viz: Drs. K. P. Moore, *ex officio* Chairman, E. C. Goodrich, W. F. Holt, H. McHatton, H. J. Williams, F. Walker.

Also the same Committee on Prize Essays continued, as follows: Drs. R. J. Nunn, Robt. Battey, W. A. Love, Eugene Foster and Henry F. Campbell.

Dr. J. S. Todd moved that the Secretary and Treasurer be given an honorarium of one hundred and twenty-five dollars each. Dr. Foster opposed the motion, and offered as an amendment, that the amount be made seventy-five dollars each. Dr. Gaston offered as a substitute, a compromise of one hundred dollars each, the expenses of the Session to be included, which was carried.

Dr. Foster moved that a committee be appointed to be known as "The Membership Committee," whose duty it will be to correspond with all the Physicians of the State not now members of this Association, and ascertain why they are not members, and to solicit their attendance at the next session, and become members of the Association. This Committee consists of Drs. Eugene Foster, J. F. Lancaster and T. M. Holmes.

Dr. K. P. Moore offered the following resolutions, which were unanimously passed:

"*Resolved*, That the thanks of the Association are due, and are hereby cordially returned to the citizens of Brunswick, and her noble corps or Medical gentlemen, for the kindly and royal treatment of which we have been the recipients during our stay in their midst.

"*Resolved*, That it is the sense of this Association that we have never been more cordially or more hospitably entertained, and that we carry away with us very pleasing recollections of our stay in this City, and that whenever Brunswick wants the Association to meet within her beautiful borders again, she has but to command, and we will be happy to obey.

"*Resolved*, That our thanks are hereby tendered the Press of Brunswick for their excellent daily reports of our sessions.

"*Resolved*, That we return thanks to the various railroads of Georgia for reduced rates in attending the Association.

"*Resolved*, That our thanks are also due, and are hereby tendered the knightly proprietor of the Oglethorpe Hotel for reduced rates, excellent cuisine, prompt attention, and general good entertainment."

Dr. Todd now called upon the stage Dr. A. W. Griggs, of West Point, the President elect, and in the following happy words introduced him to the Association:

"If ever I have been called upon to do a superfluous thing it is to introduce Dr. A. W. Griggs, your wise choice for President. Dr. Griggs was not only my father in physics, but was one of the fathers of the Association, having been a constant and working member for the last twenty-five years. I have k nown Doctor Griggs since I was a lad, for the Doctor was my father's family physician. I have often thought that the grandest panegyric that was ever pronounced upon man was found in the first verse of the first chapter of Job, 'There was a man in the land of Uz, whose name was Job; and that man was perfect and upright, and one that feared God and eschewed evil." And always had Dr. A. W. Griggs associated in my mind with that grand old patriarch. Later on in the history of the world, there appeared upon its stage a strange being, half God, half man, who 'went about doing good.' So potent was his voice that the dead heard it and came back to life. He commanded, and disease vanished. He was touched; virtue went out of him, and the sick were healed. He was called among other names the Great Physician. I think I am guilty of no irreverence when I say that in this attribute your President elect resembles Jusus Christ, the Son of God."

Dr. Griggs in his characteristic, modest and pleasing style, thanked the Association for the honor conferred. Said that for thirty years he had loved the Medical Association of Georgia next to his wife and children, and in taking his seat as its President, he would be prouder than if he should be called to succeed the immortal Gordon in the Gubernatorial Chair.

The following is a list of members whose names appear upon the registration list as in attendance:

Drs. E. C. Goodrich, J. W. Duncan, C. C. Hart, J. M. Boring, B. R. Dostor, P. H. Keaton, J. H. Crozier, H. McHatton, A. W. Calhoun, J. L. Selman, P. H. Comas, J. L. Weaver, T. E. Collier, D. H. Howell, J. S. Todd, J. A. Dunwody, W. O. Dobbins, S. W. Johnson, Eugene Foster, A. G. Whitehead, R. O. Engram, J. H. Heard, Jno. G. Earnest, Louis H. Jones, A. W. Griggs, J. F. Lancaster, T. S. Hopkins, A. P. Taylor, Virgil O. Hardin, Geo. H. Stone, C. J. Carter, Samuel C. Benedict, Frank O. Stockton, J. B. Pendergrass, W. P. Ponder, E. W. Lane, W. L. Stirling,

L. B. Alexander, Mark H. O'Daniel, T. O. Powell, D. E. Gay, W. F. Sibbett, W. F. Westmoreland, Jr., J. A. Butts, Geo. C. Dugas, P. S. Clark, P. L. Tye, L. L. Lawrence, Jno. K. Maloy, R. O. Cotter, W. H. Elliott, W. L. Bullard, W. B. Tate, Thos. J. Bridges, J. M. Kelley, Roy J. Chappell, K. P. Moore, G. W. Mulligan, W. Duncan, S. Latimer Phillips, M. L. Currie, C. B. Leitner, J. L. Weaver, P. L. Hilsman, J. M. Spence, Jr., S. Kenan, W. C. Humphries, M. A. Baldwin, J. G. Green, C. H. Richardson, G. P. Folks, W. P. Williams, Harris M. Branham, Arthur C. Blain, Geo. J. Grimes, T. M. Holmes, A. A. Rowland, L. B. Botsford.

There were others in attendance who failed to register.

Dr. Griggs now declared the Association adjourned to meet in the City of Augusta, on the 3d Wednesday in April, 1891.

A. W. GRIGGS, *President.*

K. P. MOORE, *Secretary.*

# APPENDIX.

# ASEPTIC vs. ANTISEPTIC SURGERY.

BY S. C. BENEDICT, M. D., ATHENS, GA.

To you gentlemen, of the Medical Profession of Georgia, who graduated prior to the year 1880, and who have been actively engaged in your work since that time, with no opportunities for keeping up with the rapid advances made in the past decade, other than by books and periodicals, do I chiefly address myself upon this subject, yet so recently in its infancy, and yet so fully and often discussed. Like yourselves, I have had no way of learning how to do surgery as now performed other than by practical experience, prefaced by many failures; but so wonderful are the results when the teachings of Lister, Gerster, Wyeth, and others are faithfully carried out, and so fascinating does surgical work become to anyone why has the least desire to practice it, I have thought that it might be an acceptable topic for discussion to many of you gentlemen, who, like myself, a few years ago, are striving to keep up with the advancement in modern surgical procedures, solely by working out the problem from your own practical experience.

At first the temptation is strong to rush at once to the excessive use, the profuse waste of germicidal agents under the belief that by their aid alone we could get the results we so longed for, that is, unions of divided and separated portions of the living body in a very few days, with but none, or at least very few changes of dressings and no suppuration. In some cases such a procedure may be followed by the desired results, *antiseptic* precautions may have been all that was intentionally used, but unless the antiseptic

agencies are carried out in their fullness of detail, the idea of perfect *asepsis*, perfect cleanliness, we can never say with any degree of assurance that we would not have the same old story of suppuration, granulation and repair, or putrefaction, pyæmia and death. If we would do away with germicides, would it be possible for us to have *aseptic* wounds? Is it not absolutely necessary that we make use of the principles of antisepsis in order to secure asepsis? Does not cleanliness in its perfection mean antisepsis *more* than asepsis?

Gerster in his work on Aseptic and Antiseptic Surgery, divides his operative surgery in healthy *non* suppurating tissues into aseptic, and his treatment of affections due to phlegneon, tubercle syphilis, etc., into antiseptic work, and yet in all of his operative work he uses the bichloride solutions, carbolic acid and iodoform as germicides. It may be true that this insures cleanliness as regards the micro-organisms, but without the presence of bacteria, if such a condition were possible, could we secure aseptic results without the use of germicides? To my mind, as I have reasoned it out after some years of practical experience, and the reasoning that necessarily follows such experience, asepsis and antisepsis in their practical application are one and the same, and without both of them as taught, we cannot secure the results we wish. A few surgeons get brilliant results from the use of what they term asepsis, scoffing at those operators who insist upon the use of germicides, and yet do not they invariably use boiling water for their instruments, water that has been boiled for all uses about the wound, and generally some chemical sterilizer in their solutions? I cannot satisfy myself that we dare to eliminate the bichloride solutions from our operative work, even though that be upon the abdominal cavity. We may boil our instruments; we may slush our wounds with water that has been boiled, and as near the boiling point as

we dare to use it, and yet some stray cocci are so liable to be left in the recesses and folds of the tissues, no matter how thoroughly we may try to "clean" the wound, that often we will find in a few days that our dressings are absorbing pus, and that we have failed in attaining the beautiful results we had hoped for.

The title of this paper has been worded as it is—Aseptic versus Antiseptic Surgery—for the express purpose of defining, if there be any such distinction, the difference to be understood between the words Asepsis and Antisepsis.

It may seem to you who have given this subject much thought to be simply a refinement of words, but may they not be so used as to convey separate and distinct ideas? Gerster, in his work, uses them in conjunction, but for the purposes of this article and for discussion, I prefer to contrast the two words as applied to Surgery.

Now, what are we to understand by Aseptic Surgery, strictly? Surely Surgery *without* sepsis, *without* suppuration, *without* tissue death, however this may be brought about, whether accomplished without the use of antiseptics or not. It is now known that it requires, in some quantity, the presence of living germs in the wound to produce sufficient impression as to result in injury to the tissue-cells and the evolution of ptomaines. May we not, by mechanical means alone, free the wounds of such germs without destroying them there? By this, I mean that, without applying germicides directly to the cut surfaces, may we not have an aseptic wound? I do most certainly answer this in the affirmative, and I believe that what Tait and our own Battey and others have accomplished in Abdominal Surgery by the use of sterilized hands, instruments and solutions, may also be obtained in other operations, if the same attention be given to details, and the same dexterity and rapidity in operating is used. This, I should call

Aseptic Surgery, no matter whether or not we used the antiseptics of heat at 212° F., or such chemical sterilizers as mercury bichloride for external cleanliness. In an editorial in the *Medical Record*, for November 17th, 1888, is a reference to a paper by Dr. E. Saenger, in the *Medical Zeitung*, of 1888, in which he says upon this subject, " * * * No doubt strong antimycotic solutions, such as desublimate and carbolic acid destroy the staphylococcus aureus, but the weaker solutions do not do this. * * *" The disinfection of a living tissue he considers impossible, for either the tissue is free from germs, in which case there is no need for an antimycotic, or it is infiltrated with pathogenic fungi, in which case it is impossible to destroy the fungi without at the same time seriously injuring the tissue-cells. Disinfection, he says, answers admirably on *dead* objects, but in case of living organisms more importance must be attached to vital energy. * * * By all means, he adds, let dead objects, such as instruments, the operating room, etc., be thoroughly disinfected, but after the first incision no antimycotic whatever should be used.

Again, on page 258, Volume I., Reference Hand-book of the Medical Sciences, is this statement: "Aseptic Surgery includes a series of measures calculated to absolutely *exclude* every living germ from lodgment on the wound surfaces or in the dressings. To this end there is but one known method, and that is the strictest form of Listerism. * * Let us remember that their strict and conscientious observance constitutes our positively Aseptic Surgery.

Unquestionably all sepsis is due to the work of germs coming from without the body, that is, through the medium of the air or water, or substances containing them, and brought into contact with freshly divided tissues. The air in the neighborhood of slaughter houses, post mortem rooms, and of crowded habitations, is necessarily more nearly saturated with

bacteria than the air of purer localities, such as the country. At first, when Listerism was in its infancy, the spray was used to disinfect the surrounding atmosphere, but that has now been abandoned, since it has been found that equally aseptic wounds could be made by careful attention to cleanliness of the skin surfaces around the seat of operation, and of the hands and instruments of the operator, combined with either a mechanical dislodgment of the germs by water sterilized by heat or by the addition of the sublimate.

The term "Aseptic Surgery," I would apply, then, to operative surgery upon tissues which we know, prior to our first incision, were free from all evidences, of suppuration and in which, until that incision was made, there was no possibility that there lay any stray cocci, even though this cleanliness be the result of the use of antiseptics externally.

Water that has been boiled and is used near the boiling point, I do not consider an antiseptic, because a temperature *less* than 212° F., will not destroy the life of bacteria. Such water is simply sterilized, and acts mechanically only when it frees a wound of germs. The actual cautery is antiseptic, and may be used to secure an aseptic wound. Operations made without the use of chemical sterilizers to the wound or in the dressings, I would class as aseptic, and under this head would be included the abdominal work of Mr. Tait, and indeed that of most operations as now made for laparotomies. That this aseptic mode of operating could be extended to operations upon other portions of the body and with equally good results I believe possible, but exceedingly improbable, from the fact that the peritoneal cavity affords too poor a pabulum for bacteria, the absorptive power being so great, and because in almost all other operations of importance the area of divided tissues is greater.

In contradistinction to Aseptic we have Antiseptic Surgery—surgery directed against a septic condition which we *know* to be present as operations upon abscesses, pus cavities, necrosed bone, etc. Here we know that we have to dislodge bacteria already within the tissues upon which we are to operate, and here simple sterilized solutions and dressings will not answer. We must destroy by chemical germicides the micro-organisms which are present if we would have an aseptic wound. In *Aseptic* Surgery, as I have attempted to define the term, we endeavor to *prevent* the introduction of bacteria; in *Antiseptic* Surgery, we dislodge and destroy the germs already introduced, and which are destroying the tissue-cells and producing the constitutional effects of the absorption of ptomaries, the result of such destruction.

Asepsis is, then, keeping a tissue *without* septic infection.

Antisepsis, operating *against* a sepsis already present.

This definition leads us to the distinction which Mr. Gerster makes in his work, and which, to my mind, seems an exact and admirable definition.

Acute Surgery, such as required for trauma and Operative Surgery upon non-suppurating parts he classifies as *Aseptic*. Chronic Surgery, such as is needed for caries and necrosis, either of soft parts or of bone, he calls Antiseptic Surgery.

So much for the purposes of this discussion.

In practical application of the terms I believe it is far preferable that we should discard the term *aseptic* surgery and call *all* work where we use germicides with a view to thorough sterilization, as *antiseptic* surgery, for in both forms of work, whether directed to *prevent* the introduction of germs into freshly made wounds, or in removing them from parts already septic, our efforts are directed *against* a probable or certain *sepsis* for the purpose of securing *asepsis*. Let us give to such work the name of the *method* by which we are endeavoring to

get the best results, rather than the *condition* we are striving for by the use of the method.

For the benefit of those of you who have not given this subject of modern surgery much study or thought, and yet who, like myself, are eager to get hold of any details or experiences calculated to assist us in keeping up with those younger members of the profession fresh from the teachings of men expert in modern surgical procedures, permit me to add a few words more as to how best to bring about aseptic results. Following out this line of thought, that of securing aseptic conditions by the use of antiseptics—antiseptic surgery—let us look into the details necessary to be followed.

First, then, as to what sterilizers to use and how to use them. Heat, a temperature of 212° F., is the most effective, the most surely destructive to the life of germs, but this can be used only in sterilizing instruments or for the destruction of life in water. Water that has been boiled should, in all cases where it is possible to obtain it, be used as the menstruum in which to submerge our instruments, or for uses about the person of the operator and assistants, or around the surfaces about the wound. A goodly number of surgeons use hot water only, dispensing with the chemical sterilizers, such as carbolic acid, bichloride of mercury, or iodoform either in solutions or in the dressings, yet it is but a very small proportion of such operators who are as certain of aseptic results, as those who add to the sterilized water some one or other of the germicides. In abdominal work it is not considered safe or necessary to use other than water sterilized by heat to the peritoneum, because of the danger of absorption; nor is it as important to do otherwise, from the fact that the solutions of continuity in this kind of work are slight and superficial in most cases, making surfaces

much more easily cleansed mechanically than in deeper incisions.

In a paper read before the New York Medical Association in October, 1887, Dr. Varick, of Jersey City, gave statistics collected from various sources of six thousand amputations as by the old method showing a mortality of thirty-two per cent. Of fifty-three amputations made by himself in which he had used hot water only, he had but three deaths, a mortality of less than six per cent. He used hot water at a temperature but little below the boiling point. It was brought directly from the kettle, and he judged when it reached the wound it had a temperature of about 183° F. "Its effect was to hermetically seal the blood vessels by coagulation of the albumen, thus preventing the entrance of pathogenic germs." As long as bleeding continues there is little danger of septic infection. "A wound that bleeds well, heals well," is an old saying. Another advantage of hot water is that it is a cardiac stimulant and tends to avert the danger of shock, which is present in a greater or less degree in all major operations.

Hot water then, as used about wounds, cannot be classed as a germicide, for we are unable to put it upon living tissue at a sufficiently high temperature without destroying the wound surfaces. For the purpose of surgical practice when the condition has no connection with micro-organisms simple aseptic solutions, such as hot water for the removal of blood, etc., under the head of general surgical cleanliness is *all* that is necessary, and will in very many cases produce good results. When, however, the operator must deal with a tissue which is germ infected or which he has any reason to believe may possibly be so, he must for greater security, use a germ destroying agency, that is a germicide.

My time is too limited to enter into any lengthy discus-

sion of the various germicides. It is sufficient to mention two which are strictly germicidal, carbolic acid and corrosive sublimate, and one, iodoform, which is probably more inhibitory than germicidal in its action.

These three antiseptics are the ones now used almost exclusively by modern operators, and the results obtained by their use are so very satisfactory as to appear to furnish all we need to give perfectly aseptic results. I am well aware that several of you before me do get excellent results without the so-called germicides in your surgical work and that you feel that it is due to care you exercise to insure cleanliness, but I am equally confident that if you should follow for a short while a surgeon who also added to his cleanliness schedule, the use of antiseptics, you would find his results so much more certain and satisfactory that you would be persuaded to add the use of antiseptic cleanliness in your operations.

As to the first named germicide, Carbolic Acid. A solution of one part to twenty of water, will destroy the staphylococcus aureus in one-fourth of a minute, while a solution of one to three hundred simply inhibits or supends its function, and one of one part to three hundred and fifty will permit the micro-organism to flourish luxuriantly. The use of this germicide in surgery is confined now to the sterilization of instruments, a one to twenty solution being used for their submersion. Even when used about raw surfaces in weaker solutions it is objectionable, from the fact that what appears to be a solution in water is shown by the microscope to be simply a minute mechanical division into globules, each of which may act as a minute caustic point upon the living tissue-cells.

Corrosive Sublimate is the universal germicide in all operative surgery, being used for the sterilization of the person of the operator as well as of the patient, and for keeping the

parts in and around the wound aseptic. But for the fact that it tarnishes instruments it would take the place of carbolic acid as a sterilizer for them. It destroys micro-organism in solutions of one to five hundred in ten seconds; one to one thousand in forty-five seconds; one to two thousand in one and one-third minutes; one to four thousand in two and one-half minutes; one to twenty-thousand in twelve to fifteen minutes.

Upon the subject of these germicides I would recommend the reading of two valuable papers published in the *Medical Record*, one on August 3d, 1889, upon "Relative Germicidal Value of the so-called Antiseptics," by Dr. J. E. Weeks, of New York, and the other upon "The Inhibitory Action of Antiseptics," by Dr. G. W. McCaskey, of Fort Wayne, Ind., in the issue of July 13th, 1889.

And, now, lastly, as to that most villianous of all compounds, Iodoform:

Recent investigations, notably those of Drs. Hegn and Rossing, of Copenhagen, have proven that germs may live in Iodoform and that in order to make it perfectly aseptic it must be itself sterilized. It is not a powerful antiseptic, nor destructive to the life of micro-organisms. Dr. de Ruyter, of Berlin, however, claims it to be a most valuable antiseptic, as it limits the advance of pathological processes by reason of its destructive effect upon the ptomaines, those poisonous alkaloids produced by the decomposite of tissue-cells from the action of bacteria upon them. These ptomaines, in addition to being poisonous to the system, aid the destructive action of bacteria upon tissue-cells. Now, Iodoform, while it is not claimed to seriously hinder these germs in their destructive work, does destroy the results of that work, and either enables the tissue-cells to destroy them, or to resist their action. In practice, Iodoform is used chiefly in granulating wounds, or

as an antiseptic dressing. By some operators, however, the surfaces of all wounds, whether probably aseptic or not, are dusted with Iodoform before the sutures are put in, and recently the whole wound has been filled with Iodoform gauze and allowed so to remain for two or three days before coaptation is made, when union without suppuration has been secured. In small wounds, nicely approximated, a ten per cent. Iodoform collodion is often used with excellent aseptic results. Bacteriological experiments are not in favor of Iodoform as an antiseptic, but whatever may be urged against it theoretically practical surgical experience continues to favor its use.

Whatever may be the individual experience and opinion of any of you upon this question of Antiseptics, it must be evident to all of us that cleanliness, perfect asepsis, is the condition in wounds desired by all operators of the present day, and must be rigidly sought for and obtained in order to get aseptic results. The younger surgeons in our ranks who have been educated by believers in the value of germicides to wound surface, and have seen the remarkable results of such use, are almost to a unit firm converts to the opinion that there are few strictly aseptic results without the use of antiseptics, and very many of us who took our first lessons in surgical work prior to the era of Listerism agree with them that the most perfect unions are only possible when we use germicides in our solutions or dressings.

Whatever may be the views you hold, it is evident to every one, that like the influence of homœopathy in moderating the drugging of the old school, so the new theory of the value of antiseptics has so influenced us in our operative work, that we are much more careful than formerly, to "clean" as perfectly as our means will allow any wound we may produce or that we may have to treat, already made.

Those who do not use antiseptics and yet claim aseptic results, either deny the possible presence of micro-organisms capable of producing destructive changes upon tissue cells in a wound, *or* they do not believe that germicides, in the strengths in which they may safely be applied to living tissues, can destroy the bacteria.

How any one who has studied the investigations of bacteriologists, or has followed the results obtained by operators, using antiseptics, can deny either statement, I, from my limited study and experience, cannot conceive. The future may decide that their arguments are correct, but to us who have earnestly compared in our experiences the results of both theories, it is incredible how such an assumption will ever be sustained.

To those of you who have never used germicides in your operative work, let me make the suggestion that you apply patiently and thoroughly the principle and with the earnest desire to solve the question in your own minds, and to the others who *have* tried, and either from theoretical grounds, or from experience, feel that the principle of the theory of antiseptics is founded upon a fallacy, let me join my pleadings with those of many others, that you try again, feeling as we do, that you will by perseverance become not only converts but enthusiasts in the use of antiseptics applied for the purpose of obtaining perfect asepsis.

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Dr. J. A. Dunwody led in the discussion which followed, and expressed himself as in full accord with the spirit of Dr. Benedict's paper, and from his personal experience as well as from the current literature, had learned the value of antisepsis in surgical practice.

Dr. W. F. Westmoreland, Jr., expressed himself as an enthusiastic convert to, and an advocate of antiseptic surgery;

and while he was firmly in favor of every aseptic method, and did not question that great good had been accomplished by it, and possibly under favorable circumstances surgery might be successfully done without antisepsis, yet he should always prefer, under any and all circumstances, to give himself the benefit of the doubt and use both aseptic and antiseptic practice. He could use antiseptics with perfect assurance of success in very septic surroundings, such, for instance, as crowded hospital wards, amphitheatres filled with students and spectators, and, indeed, under the worst septic surroundings. He believed that the practice in surgery of the sepsis and antisepsis principle had saved more lives for the same length of time than any other one remedy, anæsthesia not excepted. He thought that the antiseptic practice in all its details acted upon the principle of splinting and supporting a wound. It afforded the needed rest. He thought that the attempted scare and accusation that the best antiseptics were too powerful and dangerous to be used in wounds was all a myth, and would be almost willing to say that the surgeon who failed to avail himself of this boon to human life was guilty of malpractice. Dr. Westmoreland said that the use of proper antiseptics afforded, in a great measure, immunity from pain, and this fact was a strong argument in its favor. He questioned if a well authenticated case of death from bichloride of mercury could be found, where it had been *properly* used.

Dr. J. F. Lancaster next followed in the discussion of Dr. Benedict's paper, stating that his experience corroborated that of Dr. Westmoreland, and that asepsis should always both precede and accompany antisepsis, if we desired and expected to obtain the best results in our operations. In fact, he did not think it possible to have antisepsis without first having asepsis, and afterwards keeping the wound in the aseptic contion, at the same time using the antiseptic. He saw no antag-

onism in the two, since each served a purpose, and, combined, the result was a desideratum long looked for, viz. : A decrease in the per cent. of deaths from operation, whenever both are used during and after the operation.

Dr. J. McF. Gaston was next on the programme to discuss Dr. Benedict's paper. He took the position that the views presented by the author and those who had joined in its discussion struck him as very appropriate, yet to make the paper complete it should not have been limited to asepsis and antisepsis but should have been extended to septic surgery. The most important phase of the treatment of wounds is the prevention of trouble from the undue use of applications which may aggravate the condition of the patient, and a caution is needed against septic germicides. The crying evil connected with the surgery of the present day is the resort to measures which are classed as antiseptics, in such a way as to contaminate the structures and lead to serious constitutional troubles. The use of antisepsis is based upon the germ theory of disease, and while there is a difference of opinion and practice among surgeons in regard to the causative element of disorder, or the etiological factor in the propagation of disease, I cannot concur in the resort to antiseptics in the normal condition of the structures. It does not seem warrantable to claim that water sterilized by boiling, which is resorted to by many as a septic procedure, is to be considered in any sense as a germicide, and the principle of cleanliness is alone relied upon by a large class of operators in the treatment of wounds.

Under conditions not involving the presence of microbes, micrococi or spores, calculated to develop septic processes, it is held that antiseptic applications are not requisite in the performance of even extensive operations. Especially in abdominal surgery is it thought desirable to avoid all agents which, by their absorption, may prove poisonous, ; and fortu-

nately we are able to secure all of the advantages of the douche of the abdominal cavity by a solution of the chloride of sodium without any of the risks which attend the use of most other antiseptic solutions. It is well known that the entrance of common salt into the circulation, even in transfusion, is not hurtful, and some prominent gynecologists rely upon a saline wash exclusively in laparotomy. All are aware of the virtues of this agent in preserving meat, and we may profit by the domestic use of this effective antiseptic by employing it more extensively in surgery.

While I am convinced that all operations on normal tissues may be conducted upon the principle of asepsis, with due attention to cleanliness in all the surroundings of the patient and operator, at the same time I recognize fully the necessity of employing antiseptic agents when there is contamination of the structures. If a septic process exists, it should be corrected by germicides, but with due regard to the safety of the patient.

I don't wish to be misunderstood, however, in this matter, and no apprehension of trouble in advance of such manifestations would lead me to apply a medication to absorbent surfaces which is liable to produce much more harm than the supposed ubiquitous germs.

The excessive use of carbolic acid and corrosive sublimate, as washes to absorbent surfaces, cannot be otherwise than hurtful; and the practical results in setting up disorders of various kinds, with not a few fatal results, should be a warning to surgeons against the unnecessary employment of those agents.

As Grady remarked in regard to Sherman, that he was rather careless in the use of fire, I have to say that some of our surgeons are not sufficiently cautious in the use of corrosive sublimate. They slash it around as if it were a prophylac-

tic against every species of contamination, while really it is a most violent poison, and in killing germs may, in like manner, kill the patient. It is recognized as a most effective germicide, and I am accustomed to use it as a wash for my hands and for the cutaneous surfaces involved in an operation, but I would sedulously avoid bringing a solution of corrosive sublimate, however weak, in contact with a freshly cut absorbent surface. I reject in toto doing evil that good may come, and the sooner this agent is discarded from antiseptic surgery the better will it be for doctor and patient.

To a considerable extent carbolic acid is likewise subject to criticism, and especially is it objectionable in the form of spray, which is inhaled by the patient and the attendants, so as to prove deleterious. With certain limitations, good results are secured from carbolic solutions, and it is desirable that the carbolic acid should be previously dissolved in three times the quantity of alcohol or glycerine before mixing it with the water. When added to water without being thus dissolved, the globules float or simply intermingle, so that no uniform effect is secured; but having a vial of this twenty-five per cent. solution on hand, such a quantity as desired may be poured into the basin of water with the assurance of getting a uniform strength. It is rare that we require for washes, as in sponging wounds during an operation, more than a one per cent. solution of carbolic acid. If limited to this strength, if it does no good it will do no harm; and the chief consideration is to be sure we do no harm in the employment of antiseptic solutions.

I would insist that asepsis or cleanliness is the greatest benefit that has been conferred upon surgery by Lister, and thus he has proved the benefactor of mankind in arresting almost completely septic developments. With proper safeguards in the use of antiseptics, surgery will reap benefits,

but it has received a black eye from extremists, which can only be remedied by caution in the employment of septic germicides, and seeing the danger, let us avoid it.

I am disposed to reap all the advantages of antiseptic surgery without running into any extravagances or excesses by the improper use of germicides. Let us view this matter from a judicial standpoint and not be carried away by partisan feeling, so as to make an unbiased decision on the merits and demerits of the processes adopted in operations and the treatment of wounds. It is evident that safety lies in avoiding extremes on either side, and while we avoid the error of neglecting all precautions against the introduction of germs, let us not commit the blunder of combatting germs to the detriment of our patient.

If we have it in our power to employ antiseptic agents free from risk, it is not good surgery to resort to germicides which are found prejudicial to the otherwise healthy structures involved in an operation, and it is high time that the voice of the profession should be raised in tones which cannot be misapprehended against this reckless employment of septic germicides.

It is a hopeful feature of surgical practice that the eyes of some prominent operators are turned toward the dangers of corrosive sublimate dressings to absorbent surfaces, and greater caution is enjoined against having its solutions in cavities where it is employed as a wash. But the best fruits of antiseptic surgery cannot be obtained until it is limited to external applications or it is excluded entirely from our practical appliances in treating wounds of the internal structures of the body.

Dr. Eugene Foster came next on the programme for discussing Dr. Benedict's paper. He is a great friend to the so-called Aseptic Surgery. He thought "*cleanliness*" is pre-eminently next to "Godliness" in Surgery, and that when *properly* utili-

zed would leave but little use for *anti*-septics. That antiseptics had done good he did not deny, but that great harm had also been done by them was a fact equally as well established. He deprecated the wild, indiscriminate and reckless use of powerful poisons as germicides and labeled Carbolic Acid, as the bane to surgical practice, and closed by alluding to the position now taken by Tate and others of the world's great surgeons.

Dr. J. S. Todd, in discussing Dr. Benedict's paper, said he was very proud of the fact that he was the first Professor in the Atlanta Medical College to teach antisepsis. He pointed with pride to and endorsed with emphasis what Dr. Willis Westmoreland, Jr., his former pupil, had just said. The remarks of Dr. Gaston on salt as an antiseptic agent, were timely and reasonable. When a child, he had observed the negroes on the plantation, when performing certain operations on male pigs, always filled up the vacuum with salt. God, in making the world, had made the ocean, which covered two-thirds of its surface, salt; but for this wise provision of Nature it would have become a reeking pond, the pestilential emanations from which, blowing over the land, would have rendered it uninhabitable. In turpentine we have another antiseptic agent of no secondary importance. This fact he had also noticed when a boy, for the negroes who performed normal ovariotomy on pigs always smeared the abdominal incision with a mixture of fresh tar and lard. He called attention to the importance of the study of little things not only in nature but also the general practice in the use of popular medicines. In medicine as in law, *Vox Populi, vox Dei.* On almost every mantelpiece in the country you would find quinine, calomel, salts and turpentine. He was glad to see there was a revival of the treatment of typhoid fever with turpentine; as for himself, he had always used it, internally and externally; and now that the typhoid bicillus had been demonstrated

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beyond a peradventure, he was furnished another reason for continuing the use of turpentine. The adage of Dr. N. R. Smith, of Baltimore, that in the treatment of typhoid fever there were mainly needed "a vial of laudanum, a bottle of turpentine, and a hogshead of buttermilk," is as true to-day as when first uttered by that sage.

Dr. Benedict, in closing the discussion, said that in a careful study of the subject for three years, and especially in looking up the literature upon the subject since the commencement of the preparation of this paper, he had failed to find a well authenticated case of death from the use of bichloride of mercury, when all the necessary precautions and care were used.

# ONE HUNDRED AND SEVENTY CONSECUTIVE CASES OF RAILROAD SURGERY.

By H. McHatton, M. D., Macon, Ga.

I have been interested in the subject of Railroad Surgery since I commenced the study of medicine, as my preceptor was Surgeon of two Eastern Roads, and I held the position of Assistant under him, before my graduation.

It is not my intention in this paper to show how this branch of work should be done, but how it can best be done with our present opportunities. The eventual solution here as elsewhere will be the establishment of hospitals, the expense to be borne by the employees. At present, on most of our roads, there is no medical department, and, in the majority of instances, the nearest doctor is called in the emergency. No matter how competent he may be, he is not prepared to treat the case properly and immediately, as he has no reason to keep the necessary appliances on hand, consequently valuable time is lost, and insufficient treatment often the result. If he is in a city, his work is scattered over miles of territory, in boarding houses, and cabins, each case requiring a nurse, the consequent expense to the Company being enormous. We are a necessary evil to railroad corporations. They are compelled to have us for their own protection.

By making a regular medical department they are enabled to secure at a moment's notice the services of men familiar with this class of work, (and allow me to say that it presents more peculiarities than one not in the habit of doing it would think.) At the same time they secure the maximum of work at the minimum of expense; also being in a position to gain

absolute information in regard to the extent of injuries, and consequently often saving the corporation more in one case than the expense of the department would be in years.

At present we have nothing but what we can carry with us, and if there is any provision on any of our roads for moving wounded men, I am ignorant of it The vast majority of our work is done in the worst surroundings, with no competent nursing, and in many instances not only no clean vessels, but not even clean water, such a thing as securing the surroundings that are looked upon as essential for an antiseptic operation in a hospital is impossible. Consequently I confine myself to what I can easily carry, so as to be able to operate anywhere, regardless of surroundings. To a certain extent asseptically if not antiseptically.

My time is too limited to allow me to go into the details of the methods used in moving injured men, etc.

The following table of one hundred and seventy consecutive cases with three hundred and thirty-eight clinical lesions treated by Dr. Williams and myself, will give a fair idea of the type of work. Cases proving immediately fatal are excluded from this table.

Number of cases, 170; contusions of back, 12; contusions of back followed by hæmaturia, 2; contusions of shoulder, 12; contusions of wrist, 1; contusions of leg, 5; contusions of chest, 5; contusions of arm, 6; contusions of hip, 11; contusions of face, 3; contusions of hand, 3; contusions of foot, 4; ulcers following old contusions, 3; crushed fingers, 90; crushed leg, 3; crushed thumb, 11; crushed toes, 11; crushed arms, 5; crushed foot, 1; crushed hands, 12; lacerated wounds of face, 10; lacerated wounds of stump of leg, 1; lacerated wounds of foot, 1; lacerated wounds of arm, 3; lacerated wounds of scalp, 8; lacerated wounds of leg, 1; lacerated wounds of lung, 1; Sprains of ankle, 14; burns of face, 1;

burns of hand, 1; burns of leg, 1; burns of foot, 1; fractures of osinnom, 3; fractures of humerous, 5; fractures of radius, 6; fractures of ulnar, 5; fractures of acromion process, 1; fractures of metacarpus, 4; fractures of malar bone, 1; fractures of base of skull, 1; fractures of ribs, 3; fractures of tibia, 3; fractures of clavacle, 3; fractures of fibula, 4; fractures of fibula, 4; fractures of femur, 3; penetrating wound of elbow joint, 1; penetrating wound of foot, 1; gunshot wound of neck, 1; gunshot wound of thigh 1; dislocation of the radius, 1; dislocation of the humerous, 1; dislocation of the astragalus, 1; Amputations required: legs, 4; fingers, 28; forearm, 3; arm, 5; middle of foot, 1; toe, 1; thumb, 5.

You will see that the table is headed by sixty-four contusions of various parts of the body. A contusion in the ordinary sense, is not much of an injury, but these were all of clinical importance. If a man gets his shoulder caught between bumbers, and gets an injury that does not cause a fracture, or break of the skin, but is followed by serious œdema and ecchymosis with consequent loss of use of the limb for weeks, it is still a contusion. One of the above cases was in a stooping position, when a six inch beam fell striking him between the shoulders with sufficient violence to make a comminuted fracture of the tibia and fibula, and leaving a contusion extending from the seventh cervical vertebra to the coccyx.

My treatment of these cases is the wet pack until inflammatory action subsides, then friction with a mild liniment, and electricity if there is any indication for it.

The next three cases of ulcers, dependent on sloughing following contusion, were in that condition when they came into my care, and were treated with the ordinary routine of pressure, grafting and iodoform.

The next item on the table is one hundred and thirty-

three cases under the head of crushed, of which ninety are fingers. Taking the latter as an example, you will see that I do not include any fingers under the head of fractures. Consequently these injuries cover everything from a laceration of the soft parts from pressure to a complete destruction of the member.

A finger may seem of minor importance to a surgeon, but to a railroad hand who makes his living by hard work, and whose life so often depends on the grasp of his hand, it is a most serious matter, and I make it a cardinal rule never to sacrifice the smallest part of a member that there is any possibility of saving, as it is better surgery in my estimation to save one finger than to cut off a dozen. I have several hands in my memory now that are the monuments of months of hard and unpleasant work, bad crushes that would a few years ago have been amputated immediately. The injuries followed by sub-facial pus accumulations, with pockets everywhere, exfoliation of bone, and the unpleasant work accompanying such conditions, they are neither pretty nor perfect, and at first sight rather a poor advertisement of one's surgical skill. Still, I look upon these hands as some of my best surgical results, and their owners to a man, are of the same opinion. The finger will serve as a good type of the treatment of these cases.

First, we clean the member perfectly with an antiseptic solution of bichloride. I am in the habit of doing this with the stream from a fountain syringe; then if there is any part that is absolutely destroyed, cut it off, put all parts in as near a normal position as possible, and be as free as the case requires with antiseptic sutures; dry thoroughly and dust freely with Iodoform. This may not be an antiseptic but it certainly retards pus formation. Then bandage carefully with antiseptic gauze, making a moderate amount of pressure to retain the

parts in position. Follow this up with a light splint if needed, and cover all with a thick layer of absorbent cotton, followed by a common bandage. Instruct the patient to wet it with a carbolized solution if it becomes painful. Don't remove dressing until pain, constitutional symptoms or the saturation of the dressing renders it advisable. If the injury is followed by sloughing, a thick poultice for a few hours will often be of material aid, and the Iodoform is the best dressing for the subsequent granulations. Oxide of zinc ointment is also useful where there is need of slight stimulation. By following this line I have saved many fingers when the outlook was anything but promising.

Taking up the twenty-five lacerated wounds, I will simply say that where I have no chance of primary union my treatment is the same as with the finger, but in all small wounds where I have a chance of primary union, I dispense with the outer dressings and paint the part over with Iodoform and Collodion, incorporating gauze or cotton with it when extra strength is needed. Of course, at this late day there is no use discussing the old question of sutures in scalp wounds, as we use as many as we need, with absolutely no fear of the result.

Sprains of the ankle, as you see, are common. My rule is, moderate pressure and cold applications, as in contusions, followed by plaster of Paris, Martin's bandage, or the silk stocking, according to the severity of the injury.

Burns we still treat primarily with carron oil or carbolized vaseline under absorbent lint, and a thick layer of cotton, followed by grafting, if the surface is large, as soon as we get the proper granulations. It is useless to go into the details of all the forty-two fractures in the table.

The three fractures of the os innominata, with two more that I have had in private practice, have been treated by posi-

tion and sand bags. Those of the humerous were treated by right angle splint. Those of the radius and ulnar by anterior and posterior splints, usually followed by plaster of Paris. Those of the clavicle, by Sayer's method. Tibia and fibula by sand bags, followed by plaster of Paris. Femer, by Buck's extension, followed by plaster. Ribs, by the adhesive plaster bandage.

You will notice that my primary treatment of fractures is not plaster of Paris. Of course in selected cases it can be put on with safety, but ordinarily it cannot, in my estimation. Most fractures are followed by œdema, which lasts a few days. If the plaster is put on before the œdema takes place, it cannot be left on with impunity. If, during the existence of œdema as that subsides, the plaster becomes too loose and does not fully cover the indications, the repeated putting on and taking off of this class of dressing is not pleasant to the patient or the doctor. Of course, if the patient is in your reach you can take the chances, but if he is at a distance, be careful. The experience of some of the best members of our profession has been very sad. Plaster is the most valuable splint we have, but if put on as an immediate dressing it must be carefully watched—as an immediate dressing for a fracture of the leg or forearm to move a patient with comfort, a pillow makes an excellent splint.

The fracture at the base of the skill, was an interesting case. Bob B., standing on the top of a car, evidently facing the rear, was struck on the back of the head by a bridge. I saw him two hours after the accident. Large hæmatoma at base of skull on left side; pulse 70; deep hepatude, almost amounting to coma; pupils normal. Ice bag to head and dose of calomel.

Second day, paralysis of left arm; pulse 50.

Third day, paralysis of right arm; pulse 54; slight men-

tal improvement; recognizes his mother; no knowledge of events up to five years ago; repeat calomel.

Fourth day, calomel acted well; sugar in urine; no recollection of immediate past.

Twelfth day, very gradual improvement; slight motion of each hand. Still no recollection of immediate past; can't sit up, as both gleuteii are very tender to pressure; pulse 60; no sugar in urine.

Twenty-first day, all movements except extension of right arm. Remembers events up to day previous to accident.

Complete recovery in every respect in about thirty days.

I wish my time allowed me to go more fully into the details of this case. The condition of the intellectual faculties was one of extreme interest. There was a large amount of sugar in the urine. At first there was a question of middle minnengeal hemorrhage from contre coup, involving motor area of the left arm, but the supervention of paralysis of the other arm was incompatible with that diagnosis.

I also wish to call attention to the sugar in the urine as a valuable diagnostic point. Paralysis of both arms may have existed sooner than it was discovered, as at first there was no aid from mental power.

In this group there was quite a number of compound and comminuted fractures. They were all treated on the above general principles as to splints, with the addition of fenistræ, when needed for cleanliness or observation.

That brings us to the few dislocations, gunshot and penetrating wounds in this collection of cases which it is scarce worth while to go into.

We will now take up the consideration of the amputations, forty-six in number, of which twenty-eight are of the finger. The time of amputation is still one of the mooted points. I have lately seen several articles advising amputation during

shock. My rule is to operate as soon as reaction takes place, and all of these amputations, with the exception of a few of the minor ones, were done at that time. Shock in this class of injuries is, as a rule, more severe than would be expected, which is supposed to be partially due to the mental condition brought on by the surroundings at the time of the injury. I have, in consultation, decided against operating three times. Dr. Williams informs me that he has held the same opinion in two cases. As each of these cases died within six or eight hours, notwithstanding all efforts that could be made to promote reaction, you can easily imagine their condition. The only case of which I know that was lately operated on during shock died on the table, which would certainly have been the result in my three cases. Take a case of amputation of the leg as a type. Say we arrive and find the patient in a state of shock. The first thing to do is to put him in as comfortable a condition as the surroundings will permit, use external heat and be free with hypodermics of morphia and whisky. He rallies; then comes the question of where to operate and what operation to do. The railroad surgeon can recognize no regular operation, and cannot be governed by points of election. He is compelled to make the best of what he has, and save as much of the limb as possible.

I recall a case in which I had three long triangular strips of integument with their bases pointing upward, covering a crushed tibia and fibula. Their vitality seemed good. By using them I made an operation that certainly has never been laid down in a text book, got union by first intention, and a first class stump, avoiding the danger of going into or above the joint. I heard afterward that the remark had been made that it would have been better had the operation been done lower. Granted, and better still if the leg had never been crushed.

Having decided on the operation we begin by cleansing the parts thoroughly, shaving off surrounding hair, and getting everything as near antiseptic as possible. I use soap and water on surrounding parts, followed by ether and a free use of bichloride solution. The operation being done, first comes the question of ligatures; what shall we use, and how. Early teachings are lasting, and it was always my habit to use the long silk ligature, until I saw three successive amputations, where the healing was so rapid that the ligatures could never be gotten away. That led me to believe if the tissues would tolerate ten or fifteen inches of ligature they certainly would tolerate half an inch, and now I look upon well prepared catgut or silk, cut off short, as equally good.

Next comes up another non-settled question—drainage. Last year, in my Report on Surgery before this Body, I advocated the early removal of drainage tubes—from twenty-four to thirty-six hours—giving in that article the reasons. I can only add that the more I use this method the more convinced I become of its value.

Then comes sutures. I usually use silk; one row of deep coaptation sutures, and sufficient superficial ones to insure perfect coaptation of the skin.

Next comes the use of plaster. My views on that subject have not changed. I absolutely condemn it. It is not antiseptic. I feel sure that I have seen flaps slough from its pressure; and then its removal. Not long since I had occasion to perform a secondary amputation of the thigh for an osteo sarcoma, in the case of a most estimable lady, the previous operation having been performed in one of the largest Southern hospitals. It was followed by months of suppuration, dead bone, etc., and the only dread that she had in regard to the second operation was the removal of the plaster.

Then comes the final dressing. Dust all the parts freely

with Iodoform, and cover with many layers of antiseptic gauze, followed by a thick coating of absorbent cotton, on top of which goes a firmly applied cotton bandage. You see that I make no mention of the impervious rubber dressings; they have not proved beneficial in my hands. By retaining the excretions of the skin and keeping a constant warm moisture, they act as a poultice. With the exception of removal on account of the drainage tubes this dressing stays on until the parts are healed, provided saturation or constitutional symptoms do not prevent.

I had several special cases of unusual interest that I intended to present, but my time is so limited that I will confine myself to the following one:

J. C. Two hours after accident, profound shock, pulse 140; fracture of os innom; injury to right lung from probable fracture of rib.

Second day, 6 A. M., no better; beginning emphysema over anterior aspect of right lung. 11 A. M., emphysema extends all over right side from buttox to scalp, and is beginning to appear on left side. The emphysema in this case gradually extended from the hips to the top of the head, except a space about the size of a silver dollar on the occipital bone, involving all the body, right arm as far as hand, and left as far as the elbow. For three weeks his condition was critical, he having a succession of attacks of coughing, dysmœa, and collapse. Twice he seemed to be in *articulo mortis;* his respiration would go to sixty, and his circulation would be uncountable. After the third week his improvement was gradual but constant, perfect recovery eventually taking place.

There is one more point, and that is the medico-legal aspect of these cases. We are compelled to look upon each one as not only a possible but a most probable medico-legal case. The surgeon occupies a peculiar position. Often he is

the only witness who can give the past, present and probable future of the case, the Company depending entirely on his opinion in the majority of the cases that are settled by arbitration, the public usually looking most unjustly upon him as the hireling, and consequently the biased witness of a corporation.

Gentlemen, in these cases you are often put in a most uncomfortable position, and you should avail yourselves of every method in your power to place yourselves so that when your evidence is called for you can be just to your patient, your employer and yourself. I am in the habit of following these rules:

1st. In a case of any importance, or when there can be any question of diagnosis, avail yourself of counsel even if you have to pay for it.

2d. Never enquire into the details of an accident, further than it concerns your professional work. This will save you some annoyance on the witness stand.

3d, and most important; keep notes of every case of railroad injury, no matter how trivial it may seem at the time. These cases are usually postponed as long as possible, and no matter how clear a case is while you are attending it, as time passes, if it is not a most unusual one, you forget all about it.

While many cases are just, in fact, so just that most corporations never allow them to go as far as the Court room, you will find, also, if interested in the subject, enough cases that are emphatically not just, to convince you that the get of Ananias and Sapphira still walk the earth in fair numbers. If you have any doubts on the question, read the history of spinal concussion for the past fifteen years.

Some time since a lawyer asked me if I remembered a certain case that I had treated some years before. Upon telling him that I had absolutely no recollection of the case, he

informed me that the following week I would be called upon to testify in regard to it. The party at the trial, with the assistance of some friends, made out a beautiful case of total paralysis, while extracts from my notes read as follows: "First day, bladder and bowels acting; has all movements." "Third day, bladder and bowels normal; motion and sensation perfect." "24th day, out regardless of orders; left on call."

My principal reason for watching this case so closely was, that it was a bad contusion of the lumbar region, in a man of alcoholic habit, suffering at the time from decided secondary syphilitic lesions, and I feared the possibility of nerve trouble, dependent on the three causes. Nevertheless, when the name was mentioned on the street I had no recollection of the case.

The possession of a fair library of the standard medico-legal works is most desirable for any one taking an interest in this branch of surgery.

The results in these one hundred and seventy cases were as follows: Two deaths from tetanus, one following crushed toes, and the other an amputated finger, both reported to this Body last year. All the rest, to the best of my knowledge, are able to earn a living, excepting several recent ones that are still under treatment.

Please remember that these are my views on railroad surgery as it is in my section of the State, and not as it should be.

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Dr. W. H. Elliott, who had been appointed to lead in the discussion of this paper, referred to the distinction between plaster of Paris *splint* and plaster *bandage*. In railroad surgery we want a dressing as quickly as possible, and yet we want the *best*. He objected to the plaster bandage on the grounds that if swelling occurs it does not adapt itself, and, that swelling of very considerable degree, with a plaster bandage unremoved,

meant such constriction of circulation as would result in the death of the part. He prefers the flannel bandage with plaster, but insists on its being left open for the whole length of the dressing, so that it can adapt itself to the swelling, and thus obviate dangerous interference with the circulation and vital force of the part.

Dr. A. P. Taylor next followed in the discussion of Dr. McHatton's paper on Railroad Surgery, and said that Railroad Surgery differs in some particulars from general surgery, not that the railroad injury is treated differently from the same injury due to other causes, but that the situation, surroundings and circumstances are all different from what is usually seen by the surgeon. The railway surgeon is suddenly called to a distance, without warning or preparation, to attend a class of injuries that must be attended to then and there, without time to consult text books, or have this special antiseptic preparation prepared, or *that* special arrangement made, both for the patient and his own comfort. He must go to work probably on the road side, sometimes miles away from any house, with no assistance except such as he may be able to get from the bystanders, which is generally a mere make-shift. Perhaps it is night time, and to the additional disadvantages of the situation he has to work by splinter lights, or kerosene lamps with no chimneys upon them. I remember one, to me a very chilly and gloomy occasion. On arriving at the scene of a wreck, the appearance of complete destruction presented itself on all sides. Looking around me, I saw among the debris a man lying on a log covered with dirt and smutty grease, and cut all over. He also had a large splinter about one-half by one inch and fifteen inches long running from near the back of the neck and passing partially under the scapula down half way the body. Sitting near by on a stump was the conductor with cuts all over the face, head and forehead, cuts over the

body, cuts over the extremities, with one fracture of the arm, with cuts about the fracture, and a large piece of a cot about one and a half by two and a half inches and two feet long sticking through the upper portion of the left arm, and in front of the axilla, to about half way the length of the stick, which was curved. These men had to be looked after at once. There was no chance to get them away from this place, and besides, before they could be handled, the pieces of wood had to be removed from their bodies. There were no cars left to get into, no blankets, no umbrellas, in fact nothing to protect them from the storm which was gathering about them, and while a severe thunder and rain storm was going on they were operated upon and the wounds sewed up, and then they were transported across a river on stretchers.

These are some of the difficulties under which the railway surgeons have to labor, but I am thankful that it is not always so bad. I mention these circumstances to show what difficulties the railway surgeon has in making nice operations and carrying out antiseptic practice, which is so necessary to obtain the best results. The difficulties in carrying out antiseptic treatment are two: First, we have wounds that have already been exposed, sometimes for several hours; and the second is, the disadvantages under which the surgeon operates. The want of thorough antiseptic treatment must be taken into consideration when we wish to use the short cut ligature. I have practiced it a few times, and I have found trouble with the threads suppurating and coming out. No longer than the other day I was attending a young man in the absence of his physician, whose leg had been amputated from the results of gunshot wounds; the stump healed nicely almost by first intention, since, I have been informed by his physician that he is having a great deal of trouble on account of the close cut ligatures suppurating and coming out. I would rather resort to torsion

as a much less troublesome and more effective procedure, having less after effect. Above all, I prefer to risk when antiseptic treatment cannot be thoroughly carried out, the good old fashioned ligature with its end hanging out, assisting drainage, and removed at the proper time.

There is another procedure which I think should be more thoroughly considered before resorting to it, and that is *immediate amputation.* While there is probably greater shock after railway injuries than most other classes of injuries, due to the greater momentum of the body, there is no reason to my mind for operation before recovery from severe shock. The advocates of immediate amputation contend that the lesions in the injured part are undergoing death, and blood poison is more apt to occur, and that ether vitalizes the subject and causes earlier reaction, but I cannot indorse that opinion. I had rather that my patient would struggle for a few hours and make the fight against the shock alone, than against both the shock and the surgeon. If the operation is performed during severe shock and the patient recovers, in my opinion he has recovered in spite of the surgeon, that is, when the operation is performed from one to six hours after injury. A victim who is so far gone from shock as, in the opinion of some to demand operation to save his life, should be allowed to die in peace, as he surely will, if there be no mistake about his condition.

There is another condition to which I wish to call attention, and that is secondary amputations : I mean amputations performed after first twenty-four hours to the fourteenth day. I believe it is far better to fold your hands and look on during the acute and inflammatory conditions than to boldly rush off and operate as soon as your mind is made up that it will have to be done. Wait until the severe fever has given way, and the bad symptoms are subsiding, for in most cases there is a

stage of subsidence of the fever and this is your time for operation.

Dr. P. L. Hilsman being called to participate in the discussion of this paper, remarked that he fully concurred in the conservative plans followed out by Dr. McHatton in his cases, and particularly did he appreciate his views as to surgical interference in cases of shock. He alluded to cases in his own observation where operative interference apparently increased the shock, and destroyed the little hope left for recovery. On the other hand operations deferred until the patients were allowed to rally, generally did well. He also called the attention of the profession to the fixed dressing of glue with the oxide of zinc, introduced some years ago by Dr. R. J. Levis, of Philadelphia, and the shellac splints as a substitute in many cases for plaster dressing. Their advantages being lightness combined with flexibility, allowing of their removal and replacement at will.

The glue with zinc dressing is prepared as follows:

Incorporate finely powdered oxide zinc with freshly prepared liquid glue (consistence used in art) until a moderately stiff paste is formed. The limb having been covered with a roller bandage, is now enveloped with a layer of flannel, the opposing surfaces of which are stitched together on one side of the limb, allowing the edges to be free. The paste is now thoroughly rubbed into this layer, and another layer of flannel applied, stitching its edges with those of first layer. The paste is now rubbed well into this layer, and dressing allowed to dry, changing position of limb as top surface dries out in order that under surface may have free ventilation. In case an extra strong dressing is demanded, strips of flannel can be imposed between layers, or a full layer used, always covering each strip or layer with the paste. When removal is necessary the stitches can be clipped between the edges

and can spring back. Edges should now be cut close and eyelets inserted for lacing, or dressing can be kept in position by strips of rubber plaster or roller bandages. Ventilation can be made by a common harness punch.

The formula for preparing the shellac splint was purchased some years ago from a gentleman who was traveling through the country, exhibiting the splints and selling the receipt for preparing same. His directions are as follows:

Dissolve one pound of pure shellac in a pint of alcohol, (ninety-five per cent.), to which add one ounce of powdered borax. Apply this solution with a brush to one side of linen or woolen cloth, preferably the latter. Let dry thoroughly and then apply second coat on same side, and dry as at first. This makes a light splint. To make a stronger one, two of these are placed together with their shellac faces opposing, and ironed with a hot iron until they adhere. These splints can be cut into any width or length. They can be tempered by heating before a fire or in hot water, and exposing to a cold atmosphere, or plunged into iced water. To apply them they should be rendered flexible by heat from fire or hot water, and bound to limb by roller bandages. After they chill they will retain their shape, and can be removed and replaced at will. This dressing is impervious to water or oil, and will be found invaluable when such aqueous or oily substances are used. Ventilation can be made when necessary with ordinary punch. Old woolen goods that have been worn answers every purpose for the material.

Dr. W. F. Westmoreland, Jr., next followed in the discussion of Railroad Surgery, and took the position that if the patient could be seen immediately after the accident, and if the shock was not too considerable, he would operate at once. It would thus only be a prolongation or continuance of the first shock, and he thought it better than to incur the risk and bad

effects of a second shock. He would also urge the importance of early application of some fixed dressing, before the supervention of swelling. He was sure that with the proper adjustment of a fixed dressing the risk of swelling would be almost or entirely overcome. The swelling was often the result of fretting and chafing of the parts, from the fractured ends of bones, for instance, especially so in oblique fractures, or some such cause, and the well adjusted bandage or dressing obviated this source of irritation and secured complete rest and immobility of the parts, and thus prevented the swelling. He was very much in favor of a speedy fixed dressing, and the plaster bandage, made of ordinary crinoline, was, in his opinion, by far the best. It combined the advantage of perfect adaptability, being moulded accurately to all the inequalities of any part of the body, and was both light and porous; thus allowing the escape of secretions from the skin, and at the same time it was not so hot.

In closing the discussion of the paper on Railroad Surgery Dr. McHatton said: Dr. Elliott's remarks in regard to the Bavarian splint are timely. I used it formerly and discarded it. To get a satisfactory result, your plaster must be perfect, and that is not always obtainable. I think that it requires more skill in application than the ordinary roller, consequently it is not so good for general use by men not perfectly familiar with the use of plaster. So far as the fit is concerned, my opinion is that nothing can equal the plaster roller in its adaptability to all the irregularities of the limb, and if you wish to put it on before swelling has taken place, which I do not advise, you can easily take an inch, or as much more as you require, out of the superior aspect of the bandage with any of the plaster cutters. By doing so you can get all the good points of the Bavarian dressing, at the same time retaining what I consider the best points of the roller.

In regard to operating during the existence of shock there will always be more or less difference of opinion, as the term itself is indefinite. In minor degrees of shock, operations are of course admissible, but in profound shock until there is an effort at reaction I can see nothing to render operative measures advisable. The cases mentioned in my article were all seen in consultation, and the results were as I expected. I introduced the cases of retention of ligatures as something rather unusual, to show how much the tissues would tolerate under strict antisepsis, because the question of sutures and ligatures is one that is not by any means settled.

# THE IMPORTANCE OF CHEMICAL AND MICROSCOPICAL EXAMINATION OF THE URINE.

BY HOWARD J. WILLIAMS, A. M., M. D., MACON, GA.

The frequent newspaper reports of sudden death from "unknown or natural causes," and the large number of deaths in mortuary reports recorded as due to heart failure, coma, convulsions, dropsy, apoplexy, etc., arrests the attention of the thoughtful, and suggests the inquiry—what are the pathological changes primarily causing these fatal symptoms? We can, with safety, attribute a very large number of these deaths to renal disease, the presence of which was never recognized. Renal changes are attended by symptoms common to other disorders, and, if their nature is not recognized, they are easily mistaken. The apparently increasing spread of Bright's disease throughout the country, its latency, and the insidiousness of the early symptoms, is such, that it behooves the careful diagnostician to be constantly on the alert.

Life insurance corporations, appreciating the value of early recognition of the signs of these diseases, no longer request examinations of the urine of applicants for large policies only, but now require careful urinary analysis in all applications.

The correct diagnosis of Bright's disease is based chiefly upon the careful examination of the urine, both chemical and microscopical. What then are some of the requirements for careful urinary analysis, and what is their value in correct recognition of kidney lesions?

Stated broadly, the urine must be repeatedly examined to ascertain its quantity, its specific gravity, the presence or absence of albumen and of tube casts, and, lastly, the estimation

of the quantity of urea excreted. Frequently repeated examinations in doubtful cases are necessary since variations in the quantity, specific gravity, and presence or absence of albumen and casts are liable to take place from day to-day in all cases, and an examination during any temporary change might lead to incorrect diagnosis. While it is generally true that signs of the disease may be found at some time in all cases, yet persons have been known to have chronic lesions of the kidneys for years without the presence of signs and symptoms, and, after death, from accident or other cause, chronic renal changes were found by post-mortem examinations. Furthermore, symptoms of a latent renal disease may be brought to light by some intercurrent malady.

The daily quantity of urine should be known, since an increased or diminished quantity is indicative of certain pathological changes. But the quantity, either increased or diminished, cannot alone be considered diagnostic, since changes may be temporarily brought about by processes not pathological. Changes in quantity to mean anything, must persist in the urine of repeated examinations, and must be attended by characteristic changes in color, specific gravity, and presence of albumen or casts.

The specific gravity is sometimes regarded as diagnostic of kidney lesions; but its value is doubtful, unless it is persistent. A temporary increase of the solids or diminution of the watery elements of the urine might give a high specific gravity that could be easily misconstrued if the diagnosis rested simply upon one examination. The average of many examinations, in conjunction with other signs, must alone be of value. So important, however, is this sign, that life insurance companies will not accept risks having a continuously high or low specific gravity.

The presence of albumen in the urine is an important con-

sideration in the diagnosis of renal diseases. For a long time after its existence in kidney changes was discovered, its presence was regarded as a fatal omen. But more recent investigations have shown that it is not pathognomonic, and it is now no longer dreaded. It is found present in other conditions, and under circumstances not fatal. It is now known to be present in health, and in morbid processes not renal, as cardiac disease, irritations of the central nervous system, infectious fevers, and some local disorders, as of the bladder and urethra, and in pregnancy. Its presence in these disorders cannot be taken as evidence of associated renal lesions. Though generally present at some time during Bright's disease, it is absent sufficiently often to make it of doubtful diagnostic value, and its absence from the urine is not a guarantee that renal changes are not present. It is often present and yet escapes detection by the usual tests. Recently a specimen failing to respond to heat and nitric acid, was referred to Dr. McHatton and myself for further examination, and, with other re-agents, we found albumen. In doubtful cases, therefore, repeated examinations should be made; and not one or two, but several re-agents should be employed. As pathogonomonic of Bright's disease, and in the differentiation of its various forms, albumen alone is not sufficient; to be of value, it must be associated with other signs.

Additional evidence of renal disease is obtained by the microscopical examination of the urine, and the detection of tube casts or cylinders. These casts are of clinical importance, as they come from the depths of the uriniferous canals of kidneys whose functions are defective. Their presence continuously in the urine is the best kind of evidence of renal changes, since they can be found when albumen cannot be detected, and their characteristic appearances may be useful in the differentiation of the various types of the disease. Like albumen,

they may be temporarily absent from the urine, and one examination at this time may lead to false conclusions. Again, they are occasionally found in health, and under circumstances not dependent on renal changes; hence, to be of value, they must be found in repeated examinations. Bright's disease has been known to exist in an individual without the presence of casts, therefore their absence cannot be infallible evidence of freedom from disease.

While albumen and casts are abnormal products eliminated by the kidneys in Bright's disease, urea is a normal ingredient of the urine, which is found to be excreted in diminished quantities.

This diminished quantity has, hitherto, been of clinical interest simply as evidence that a certain quantity of urea is retained in the blood, producing directly or indirectly uræmic poisoning. Recently, however, it is assuming importance with reference to the recognition of chronic renal disease. Much is being written on this question, and so high an authority as Dr. T. Grainger Stewart employs it as a diagnostic test for kidney lesions.

Dr. C. S. Bond, of Richmond, Indiana, has a paper in the *American Journal of Medical Sciences*, January, 1890, on the subject. He bases his conclusions upon the repeated examinations of fifty cases, and his observations cover a period of more than five years. This diminished urea is found in urine containing albumen and casts; and it is also found in the urine of patients having the outward symptoms of renal disease, long before albumen and casts are discovered. If this latter fact will hold good in all cases, examination for the quantity of urea may be used as a test for the early stages of Bright's disease. Like the other signs of kidney changes, it is said to be only of value in the presence of other symptoms, and repeated examinations are necessary to establish the validity of its evidence.

It would seem, from the above considerations, that all these signs of renal diseases are defective, and, taken separately, unreliable. This, in a measure, is true; yet, upon the association of several, during many observations, rests their value. Upon these several signs, then, depends the almost absolute recognition of a disease, whose pathology is far-reaching; not simply a lesion of the kidney only, but, as revealed by recent investigations, an involvment of other important tissues. In the light of these recent discoveries in pathology, may we not hope for other signs of greater value, and readier methods of detecting the earlier changes of kidney diseases?

Having considered these diagnostic signs found in the urine, let us turn to some of the general symptoms and complications calling for urinary analysis. As before stated, the disease is so insidious, and many symptoms so easily attributed to other diseases, that renal changes may exist, and be far advanced, before they are recognized.

The nervous symptoms of Bright's disease demand careful consideration. Coma and convulsions are common terminations of the disease. A fatal uræmic coma may strike down a person of unknown history, and, if there is no urinary analysis, the trouble may be mistaken for apoplexy or for narcotic poison. So irritable is the nervous system in renal disease, that, like the highly organized system of childhood, the slightest disturbance of equilibrium of functions is sufficient to bring on convulsions. Persistent neuralgic and chronic rheumatic affections are frequently expressions of chronic renal lesions; no dropsy or other outward symptoms being present to call attention to the kidneys. Such cases proving rebellious to treatment, suspicion is aroused, and examinations of the urine may disclose their true source.

Œdema of the Lungs, Chronic Bronchitis, and Asthma,

of renal origin, have no characteristic symptoms, except those revealed by the urine. Treatment directed to these disorders, without consideration of the kidney affection, can only result in failure. The true origin of the following case was determined by examination of the urine, after months of suffering from erroneous diagnosis, and misguided therapeutics, owing to the neglect of urinalysis.

Mrs. B., white, aged 47 years, consulted me in February, 1889, for a distressing cough, which had been pronounced a Chronic Bronchitis, and so treated, without relief, for several months. She suffered with extreme dyspnœa, attended by cyanotic lips, and inability to lie down. She expectorated large quantities of white frothy mucus, stained with pus and blood. Large and small bronchial rales could be heard throughout the chest. The cardiac areo was enlarged; the heart over-active; the pulse small, feeble and rapid. She had constant headache; occasional attacks of nausea and vomiting, and some œdema of the ankles.

The daily quantity of urine was diminished to 12 or 20 ounces; dark colored; specific gravity 1018 to 1022; only a very slight trace of albumen could be detected by the most careful testing, while hyaline and granular casts, and at times, blood corpuscles were present. Upon close inquiry, she gave a history of acute dropsy, followed by apparent recovery three years previous. She has been under my observation for fourteen months; the bronchitis is relieved; her general condition is improved, yet she has had several mild uræmic attacks. Her family know her condition, are prepared to meet her uræmic symptoms, and will not be surprised by an unexpected termination of her disease.

In affections of the heart, urinalysis is of great value, both in diagnosis and prognosis. No two classes of disease are more intimately related than those of the heart and of the

kidneys; therefore, the study of the one is essential in the presence of the other. This association is particularly marked between cardaic hypertrophy and chronic interstitial nephritis, and, in a given case, with symptoms suggestive of both disorders, it may become necessary to decide whether the disease is the former with attendant renal congestion, or the latter with heart trouble, due to changes in the blood and blood vessels. Albumen is found in both conditions, but tube casts rarely present in purely cardaic disease, are nearly always found in contracted kidneys. These cases of contracted kidneys with hypertrophied heart, usually die suddenly with uræmic symptoms; the detection of albumen or casts may give warning in time to delay, by judicious therapeutics, the fatal day. In a feeble heart with disturbed renal functions, the detection of albumen with casts is a fatal omen, and gives warning of a sudden ending. In the following case, urinalysis gave this warning, and its sudden fatal issue did not find her friends unprepared.

Mrs. S., white, age 70 years, had a history of an attack of angina pectoris twelve years ago. Since then she has had to take at times, digitalis for palpitation. When called to see her, June 25th, 1889, she had been suffering for several days with dizziness and a full feeling in the head; she saw specks floating before her eyes and heard peculiar noises, and she complained of cardiac uneasiness. The pulse was feeble, easily compressed, and intermittent. The cardiac area was enlarged, and its impulse feeble. No murmurs were heard on auscultation, but the cardaic sounds were feeble and intermittent, though not irregular. She had some slight œdema of the ankles. The urine had recently increased in quantity—the daily amount was two quarts; specific gravity, 1020; albumen largely deposited, hyaline and granular casts present. Under treatment appropriative to kidney disease, she im-

proved up to August 5th, though albumen and casts remained largely present. On this day, while engaged with her household duties, she was suddenly seized with severe pain in the back of her head, followed immediately by unconsciousness and stertorous breathing. After an hour consciousness partially returned. As soon as the urine could be collected it was measured, and amounted to ten ounces in twenty-four hours: specific gravity 1016; albumen abundantly deposited; tube casts present; vomiting, headache, irregular action of the heart, attacks of blindness and hallucinations of hearing continued some days; her condition then slightly improved. September 1st, after a night of restlessness, headache and vomiting, she passed into a quiet sleep. Her attendant went out of the room for a few moments, and returning, found that she was dead.

Of all the complications of Bright's disease, those of the digestive organs are the most commonly overlooked. Chronic catarrh of the stomach, with nausea and vomiting; catarrh of the intestines, with profuse diarrhœa and functional disorders of the liver, are found associated with this disease. The headaches, nausea and vomiting, and so-called torpidity are often ignorantly attributed to a disturbance of the hepatic functions, popularly known as "biliousness." Even the more violent forms of uræmic poisoning, coma, or convulsions, have been thus mistaken. Two or three years ago Dr. McHatton reported a case of the latter character in the Atlanta *Medical and Surgical Journal*, and called attention to the frequent erroneous interpretation of this so-called "biliousness." To complete the history of this case, and to show to what fatal ends this error may lead, I will state that shortly after this report appeared, the patient moved away from Macon, and notwithstanding the most positive assurance that the disorder was uræmic, and the patient so instructed to

inform his next medical adviser, he died in one of these uræmic attacks, his death being attributed to heart disease. I have at present under my charge one of these "bilious" individuals, whose urine has a constant specific gravity of 1010, and contains a trace of albumen and tube casts. He is wedded to his "biliousness," because his first attendant so named his disorder. Such mistakes will occur less frequently when urinalysis becomes more generally employed in these simple indispositions.

These sudden attacks of vomiting and diarrhœa are frequently beneficial. The blood, charged with urea or other poisonous matter, irritates the stomach and bowels, provoking vomiting or diarrhœa, which in time drains the poisonous fluids from the system.

These attacks, at the same time, are prognostic; they are often the forerunners of grave uræmic symptoms. The knowledge gained in such conditions, by examining the urine, is invaluable, indicating measures for aiding the elimination of the poison. It would be criminal, if knowing the character of such attacks, remedies to arrest these symptoms were employed.

Recently a man of intemperate habits had a severe attack of vomiting; a hypodermic injection of morphine relieved the vomiting; a night's rest was obtained, but the next morning, on attempting to cross the room, he fell, and in two hours, died comatose. Examination of his urine, no doubt, would have revealed evidences that he was suffering with uræmic poisoning.

This next case is of peculiar interest in this connection, illustrating the latency of renal disease; the possible uræmic origin of some diarrhœas; the mistake of arresting such a discharge, terminating in convulsions and coma; and suggesting the possible value of urinalysis in spite of a supposed simple etiology.

Mr. E., white, age 53 years, a large, healthy looking man, of temperate habits, had not been ill for fifteen years until this attack, which began as a mild but rebellious diarrhœa three weeks before my first visit. I saw him July 15th, 1889, in the absence of his family physician, for what he regarded as a relapse. He had frequent watery stools, great thirst, occasional vomiting, headache and sleeplessness, but no fever. His disorder was attributed by his physician to eating over-ripe fruit. As others in his family were simultaneously affected with a similar disorder, the conclusion was plausible. Under ordinary treatment his diarrhœa was checked, and I dismissed him at my third visit. His urine had never been tested.

July 23d I was again called to see him. He was restless, had not slept two out of seventy-two hours, had nausea and an unquenchable thirst. He would drink, his wife said, three gallons of water during the day and night. He passed large quantities of urine, which I requested to be measured, and a large specimen furnished me the next morning. From 5 P. M. of the day of my visit to 5 A. M. the next day, he had passed four quarts of colorless urine. The specific gravity was 1002, and contained neither albumen or sugar. The urine was allowed to settle several hours; tube casts were then found with the microscope. I did not see Mr. E. during the second morning; but at 5 P. M. I was sent for urgently to see him, as he was unconscious and thought to be dying. During the day, I was told, he had passed three quarts of urine, but none since 2 P. M. Passing the catheter, only two ounces were found in the bladder. Without premonitions he began to have convulsive twitchings of the facial muscles, rapidly passing into general convulsions. I found him in a comatose condition. All efforts to promote reaction failed, and at 9 P. M. he died.

In other disorders in which the kidneys may be affected, as pregnancy, disease or irritation of the central nervous system, and the essential fevers particularly, most valuable information, diagnostic, prognostic, and therapeutic, may be found by examination of the urine. It is not uncommon to find albuminuria in the malarial fevers, and chronic malarial toxæmia bears a well known etiological relation to Chronic Diffuse Nephritis. The anæmia, dropsy and other symptoms present in such cases may reasonably be attributed to the blood changes of malarial poisoning; urinalysis, however, will correct the mistake, by showing signs of diseased kidneys.

I present the next case as one of Chronic Diffuse Nephritis, dependent upon chronic malarial poisoning.

Mr. C., white, aged 23 years, consulted me in February of this year for a persistent diarrhœa, which he said he could not cure. His family history was good; personally he was temperate. His general health was good until four years ago, when he began to have chills. Following this he has a history of chronic malarial poisoning, of four years duration; the attacks lasting from three to six months, with intervals of about three months. He has no headache, no cough, no dyspnœa, sleeps well, no loss of flesh, but is quite feeble, and and has a poor appetite. He has occasional attacks of nausea and vomiting; lungs and heart normal; liver not enlarged; spleen, however, enlarged, can be felt below the ribs. Oedema of ankles, but no ascites. Pulse 76; temperature 98.6. Skin has a peculiar grayish color, suggestive of grave trouble. Urine, daily quantity, 12 to 16 ounces; color, dark but not smoky; specific gravity, 1020; albumen, present in large quantities, 7 gm to the litre by measurement with Esbach's albuminometer; hyaline and granular casts, but no blood corpuscles under the microscope.

Treatment directed to elimination of excrementitious

matters in the blood relieved his diarrhœa. He is now taking Flint's Tonic Chalybeate Tablets, with benefit.

The presence of albumen in the urine of individuals apparently in health, is sometimes accidently discovered, notably during examinations for life insurance.

This albuminuria has attracted much attention during the last few years, though little is known of its nature. From its appearance in apparently healthy young adults at certain hours during the day, it has been variously called functional, physiological and cyclical albuminuria, or the albuminuria of adolescence. Exercise, diet, taking food, cold baths, mental strain, etc., seem to evercise an influence upon its presence, and it may possibly be associated with disorders of the blood making organs, renal circulation or nervous system. In this connection, I present the following cases:

J. S., white, age 24 years, height 5 feet, 10½ inches, weight 135 pounds. Habits temperate; no hereditary tendencies; heart, lungs, digestive and nervous functions normal; general health considered good. His urine passed during the examination had a specific gravity of 1028, albumen was present in a small amount; sugar was not present, nor were tube casts found, but crystals of oxalate of lime were abundant. He was requested to bring the first urine on rising next morning; also to measure the daily quantity. Three pints were passed in 24 hours. No albumen, no sugar, no tube casts were found in the early morning urine; while that passed at the office the second visit contained albumen. About twenty observations were made in this case with following results: Albumen absent in the early morning, a trace while at work. The daily average was less than 1 gm to the litre. Specific gravity 1022 to 1028, no sugar, and no tube casts were found. Taking food did not affect his urine. He never had any symptoms usual to renal disease. He passed then from observation until quite

recently. Examination now of urine shows albumen, but no sugar, and no tube casts, while oxalate of lime crystals are still abundant; specific gravity 1032.

The next case was referred to me early in February; C. R., white, age 21 years, moulder by trade, height 5 feet 8 inches, weight 131 pounds, sallow complexion, stooping shoulders and flat chest. No hereditary or acquired disease. Heart, lungs, nervous system and digestion normal. He applied for life insurance, and, albumen being found in his urine, he was referred to me for further observation. He was requested to measure the urine passed in 24 hours, and bring specimens passed immediately on rising from bed, one hour after breakfast, one hour before and after dinner, and one hour before and after supper. Examinations of these yielded the following: After rising, specific gravity 1024, no albumen; after breakfast and on walking to work, specific gravity 1028, albumen, a marked trace; before dinner while at work specific gravity 1024, albumen, a trace; before supper after walking home specific gravity 1028, albumen, a marked trace; after supper specific gravity 1028, albumen, a trace. No sugar was present, nor were tube casts found in the entire quantity. The quantity of urine for 24 hours measured three pints. I have carried on a series of observations in this case, and have examined 75 specimens of urine, with following results. The daily quantity of urine is uniformly 45 to 55 ounces; specific gravity from 1022 to 1034, albumen is never found in early morning, it appears in marked traces after walking, in slight traces while working at his trade, while on two occasions, when he was requested to remain in bed, it was absent for the entire 24 hours. There was less than 1 gm of albumen to the litre, by measurement. Diet and taking food had no effect on its presence. Tube casts have not been found, notwithstanding the most careful search; nor is sugar ever present. A careful

watch for symptoms of Bright's disease has been observed, and, with the exception of this albuminuria, this man is absolutely free from disease. He has taken for the past six weeks "Flint's Tonic Chalybeate Tablets," with a gradual though not marked improvemeut in the albuminuria.

This albuminuria is claimed by some to be innocuous, by others to be pathological, therefore prejudicial, and these opinions of course exert their influence on the question of life insurance. With reference to the relation of this form of albuminuria to life insurance, I wrote to the medical directors of two of the companies for which I examine, Dr. A. DuBois, of the "Manhattan Life Insurance Company," of New York, and Dr. J. M. Keating, of the "Penn Mutual Life Insurance Company," of Philadelphia. Both say their companies will not entertain such risks. I embrace in full the opinion of Dr. Keating, as it expresses his views of the pathology of this disorder. He says: "There is no proof that albumen is ever found in the urine of healthy individuals; therefore, the term 'Functional Albuminuria' is not correct. But again, there is found in youths a trace of albumen at times, disappearing and then appearing, sometimes after meals, and especially after exercise, which is unaccompanied by casts, and which probably depends upon some curious disease of the blood, mal-assimilation, or on some form of enervation; I believe it is always the result of some pathological condition, more or less. Cases presenting this condition should not receive policies of insurance until this has entirely disappeared."

In regard to the diagnosis of these cases, attention to the following points will usually lead to a satisfactory conclusion. First, age, youth and young adult life. Second, sex, males most often affected. Third, general health usually good, absence of symptoms suggestive of renal or cardiac disease. Fourth, quantity of urine, normal. Fifth, specific gravity,

high. Sixth, absence of tube casts—albumen with casts mean kidney disease. Eighth, accidental discovery, as during examination for life insurance.

The prognosis of this affection is as yet uncertain. The time since it was first observed is not long enough, nor the history of the cases so far collected of sufficient duration to draw positive conclusions. Some cases have been reported as passing finally into chronic renal disease; while very many geadually return to health. Extreme caution iu the mode of living and tonic treatment are the only therapeutic indications so far recognized.

If, by this paper, I shall have been instrumental in arousing a deeper interest in the careful and frequent analysis of urine, and, by this means, aided in the employment of rational treatment in disease, I shall feel that my efforts have not been in vain.

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Dr. McHatton, in discussing Dr. Williams' paper, said it is a pleasure to have had the opportunity to read the paper of Dr. Williams. It is a most important subject.

My experience teaches me that more patients die of unrecognized kidney lesions than any other disease. I have always paid considerable attention to urinary analysis, and I can truly say that scarcely a month passes that I do not see patients that have been treated for biliousness, or what not, when the trouble is due to lesions of the kidneys.

A case of chronic cirrhotic kidney, if one is not particularly on his guard, is liable to pass unrecognized, and finally be buried under some other diagnosis. It is so insidious, we have none of the ordinary symptoms that are usually associated with Bright's. The urine is probably increased in quantity, the ordinary tests do not reveal the presence of albumen, and, to be plain, we are careless in the examination. A patient comes in; the question of Bright's may occur, a specimen of

urine is requested, no questions are asked as to quantity; specific gravity is one thousand and fifteen. Heat and nitric acid are used. No albumen, Bright's excluded, and the only chance to diagnose the case is lost. We all know better, and still it is done every day. The life insurance companies know how this is, and consequently exclude, as a class, all applicants whose specific gravity is below a certain mark. These cases can be diagnosed, and they should be.

A general sense of failing health, with hypertrophy of the left venticle, without valvular lesions, and urine of low specific gravity, in a patient of middle age, should always induce us to make careful and repeated examinations of the urine. The use of the term Albuminuria, as synonymous with Bright's disease, is very unfortunate; a large percentage, if not the majority, of cases of Albuminuria are not Bright's, and a good percentage of cases of Bright's are often without Albuminuria.

The subject of urinary analysis should be faithfully studied by every practitioner, and if he has not the necessary instruments to carry out his work, he should by all means obtain them. The details of the work are so plain in the paper read before you that it is useless to add anything more to it.

In discussing Dr. Williams' paper, Dr. Todd said "he was pleased beyond measure at its tone, and hoped it would be generally read, and the suggestions therein contained, practiced. Many obscure affections could be cleared up by testing the urine, not only chemically, but microscopically. He detailed several cases, where he had afterward been called in consultation, where the proper diagnosis had not been made because this fluid had not been tested. Carbuncles, in persons over fifty years old, according to his experience, were, in a majority of cases, local manifestations of the constitutional disease, diabetes mellitus. Again, senile gangrene and diabetes mellitus, according to his opinion, went hand in

hand. As to the treatment of these diseases, diabetes mellitus and Bright's, he was sorry to say that there were only remedies for ninety-nine cases out of a hundred. Diet, without which all medicines were nil, was so almost impossible to be observed, that he was sure some other remedy would have to be discovered before it could be maintained for a sufficient length of time to be of lasting avail.

# A REPORT ON THE PROGRESS OF OPTHALMOLOGY AND RHINOLOGY.

BY R. O. COTTER, M. D., MACON, GA.

I am well aware that an attempt to present anything like a *resume* of the progress made in any special line of practice would be out of place, and tiresome to an audience composed largely of general practitioners; hence, I shall endeavor to present only some of the more important, and lately known measures in the treatment of diseases of the eye and nose.

## EXTRACTION OF CATARACT WITHOUT MAKING THE IRIDECTOMY

This (so-called) new operation, which is, and has been quite the fashion with some surgeons in this country for a year or so, is simply the revival of an old operation which was practiced in France some thirty years ago. Its enthusiasts claim that, among other things it offers and secures by the circular and movable pupil which it leaves, as a rule, better vision than is obtained by the usual operation *with* iridectomy. I refer to Von Graefe's linear extraction, which has given, for twenty-five or thirty years, such great satisfaction. I think this claim remains yet to be proven. Recently I reported the case of a patient who, from an injury received a year ago, which tore away nearly all of the iris of one eye, leaving only a narrow strip (hardly one-fourth of it) yet, with this narrow strip of iris, he has perfect vision—reads the finest test type. I first saw this new operation made last Summer in New York, at the Manhattan Eye and Ear Hospital. I liked the operation, for, when successful, it seems to be really the ideal operation, and it is perfectly natural that most eye surgeons should desire to make it. But it is admitted, even

by its advocates, to be a very difficult one. I go further and say, it is an exceedingly *hazardous* one. I am very sorry too that it is so, because I am confident that, very many eyes will be lost by it before it shall have been abandoned, as I think it will be before very long by conservative surgeons. What I now have to say is an expression of my own opinion, as well as it can be formed from having made the operation nine times myself, and from some experience of others whom I know. Of my nine cases, eight were successful, and one was a complete failure. These eight successful ones now enjoy good vision, but during the progress of the operation of three of these, complications arose which I almost feared would ruin the success of the operations. These mishaps I have seen occur to the most skilled and careful operators, and they cannot certainly be anticipated or prevented. Such mishaps are extremely rare with me when I employ the Graefe's extraction.

In the first place, the circum-corneal incision has to be very extensive—fully two-fifths of the circumference. This augments the danger of non-union and suppuration. Then, as we wish to keep the pupil contracted, we cannot use that great sedative, Atropine. Indeed, on the other hand, it is recommended that we drop a solution of eserine in the eye after extraction. As we know eserine is a drug which is capable of doing mischief by its irritating properties, I regard this as unfortunate. Loss of vitreous, while it may not be one of the commonest mishaps that may occur, is the worst accident that is liable to occur, and it is surely more liable to occur than it is in the Graefe's extraction. This is because of the extra large circum-corneal cut, and that the lens comes out with more of a gush than in the usual operation. During all of my former experience in operating, I was so fortunate as to have never had any patient suffer a serious loss of vitreous. In my third case of the new extraction, however, after the

lens had been delivered, the patient, a silly, uncontrollable old woman, foolishly snapped her lids together as strongly as she possibly could—though there was no pain whatever. A large amount of vitreous gushed out and the eye was lost. By the way, I notice recently that loss of vitreous after the operation had been completed, was reported as having occured among the patients at the Manhattan Hospital, presumably in somewhat the same manner as in my case. So far as my experience goes, I have had no iritis as the result in any of my cases, and I should think this is in favor of the new operation, because with an uncut iris it seems reasonable that there should be less danger of iritis. However, as I have for the past five years adopted the rational plan of "letting the eye alone" after the operation (I mean, not disturbing the eye for two or three days if possible), I have a minimum amount of iritis to deal with any way. Another point I will mention in favor of the new operation is this – although I had about decided about six weeks ago that I would, as a rule, abandon the operation, since then I have been somewhat forced to make it in two more cases. These were cases when the patients were exceedingly scary and nervous; they constantly jerked and rolled their eyes in all directions. Now, in such cases there is often a very provoking and dangerous jerk of the eye just as we grasp the iris to make the iridectomy, in the Graefe's operation. Frequently this causes very troublesome hemorrhage, and sometimes does worse than this. So in these cases I found it necessary to deliver the lens without making the iridectomy. I suppose the most frequent accident that occurs in this operation is prolapse of the iris. Indeed, it is to be expected, and when primary, is, so far as I have seen, usually reducible, but when secondary, is apt to prove an annoying and tedious matter.

Subsequent incarceration of the iris in the wound, is also

said to be a tolerably frequent occurrence. If I am positive of anything in regard to what I have seen in cataract extractions (and I will say they were not my own cases) it is that, I have known more unsuccessful results follow from the meddling, or two frequent dressing of eyes than from all other causes combined. If I can possibly avoid it, I do not remove the dressing for two or three days, nor do I ever open the lids until the fourth or fifth day, if there is no swelling of the lids and other symptoms. Now, suppose you have made the extraction by the new method and all goes well for two or three days (as was my experience in one case, and it was one of the most successful, and as smooth an operation as I ever saw), but about the second or third day the compress or the bandage should get slightly awry, or the patient move his lids (and they will do so) the aqueous comes out with a gush, and the iris becomes prolapsed. This is, in my opinion, *very* liable to occur. Indeed, this was the tendency in the majority of my cases. Fortunately I overcame the trouble in all of them; but one of them was a very tedious affair, and kept the patient from going home for at least four weeks, though she now has good vision. During one of my operations the iris fell forward upon my knife, and for some time it was quite troublesome. This is a very common hindrance to the operation, I should say, and I should think, to any one but a skillful operator, it would be liable to cause serious mishaps. It seems liable to cause the line of incision to be deflected, or to gash the iris. I will also say, I find it best and safest in making this operation to remove the speculum as soon as the circum-corneal incision is made. I may appear to be out of fashion in having to condemn this operation, but I believe the progress of opthalmic surgery will yet sustain me in my opinion. I believe that if the records of failures were brought to light, it would show that many eyes are being sacrificed by

it which would have been restored to vision by Von Graefe's method.

In spite of the fact that so much has been written regarding the improper use of cocaine in eye troubles, I am sorry to have to repeat that I too frequently find this most valuable boon to the opthalmic surgeon being used in a very improper manner by some good physicians. They persist in using it as a sedative, or as a collyrium. Let me most earnestly protest against such a use of cocaine. The continued use of it, as in eye washes, is positively harmful. It denudes the cornea of its epithelium, and when used, as it often is, in ulcers of the cornea, it does great harm. As for the use of atropine—the most valuable of all eye medicines when properly used—yet its indiscriminate use often does irreparable injury to the eye. My apology for repeating this well known truth is that within the past twelve months I have known of four or five instances where general practitioners (and men of undoubted ability, too,) had used atropine in making examinations, or improperly, in the treatment of eyes of patients who had glancoma, some incipient, and some established cases. In all these cases serious harm was done.

Since reading my paper upon the correction of errors of refraction, at our meeting of last year, I am confident that I hardly made it strong enough. I am more than ever convinced that more and more cases of conjunctivitis, and frequently resultant granulated lids, have their origin solely in this cause. I am more than ever convinced that many hypermetropes are made near-sighted by being allowed to continue close use of their eyes with uncorrected errors of refraction. I then said that I was not ready to give my testimony as to the comparative merits of atropine, which paralyzes the accommodation for several days, and homatropine, whose effects last only about twenty-four to thirty-six hours, when used in refractive

work. After a sixteen months trial of homatropine, I am very sorry to have to say it cannot always be depended upon. I have used it in all sorts of ways, and as thoroughly as I have ever heard its use advised. Dropping a six, or a ten-grain-to-the-ounce-solution of it in the eye every ten minutes, for an hour, and know that it will frequently fail, especially when used with young patients, most particularly where there is spasm of the ciliary muscle, and the patient simulates near-sightedness. Here atropine should be used. In adults whose time is more valuable, and also as there is greater possibility of incipient glancoma, I generally use homatropia. It does not keep the pupil so long dilated. We should bear in mind that many eye diseases, neuralgia, conjunctivitis, stricture of the nasal duct, etc., are caused and aggravated by nasal catarrh in its various forms. If we overlook this now well-established fact, we will fail to relieve many perfectly curable eye troubles.

This brings us to the subject of RHINITIS, by which is understood, a catarrhal inflammation, (if I may use the term inflammation) of the mucus membrane of the nostril and continuous passages. In this section, unless it is from syphilis, we see comparatively little of ozena, so I will not take up time with it.

In my former writings upon hypertrophic catarrh, I am sure that I have not given due prominence to the fact that I consider dyspepsia to play such an important part in the causation and aggravation of these cases. Usually it is in the form of gastro-intestinal catarrh, and before we do anything in the way of surgical treatment, or in connection with the local treatment, we must be sure to do all we can to improve our patient's digestion and assimilation. Of course this means a herculean task. Diet, exercise, thick-soled shoes to be worn, tobacco smoking to be stopped, and, last and most important

of all, coffee drinking must be stopped; and, in my opinion, tea is nearly as bad. I know nothing better for these dyspeptics than a cup full or so of hot water, sipped one hour before meals; and for the distress which for two or three hours attends the badly digested meal, I know of nothing so good as a cup full of hot water. It will, if anything will, relieve the overburdened stomach by washing the contents onward, and relieves like magic, the distressing feelings of the patient in hypertrophic catarrh. I have many a time made an examination of the patient's nostrils after they had eaten a heavy or indigestible meal, and the vascular turgescence is always greatly aggravated at those times. As to local and surgical means, I attach the very greatest importance to such standard orthodox remedies as chromic acid, the cold wire snare and the saw. We used to waste much chromic acid by applying it upon a flat probe, in the form of a paste. This is the way I now apply it; a small bead of it fused upon this delicate applicator. By the way, I have sometimes seen (not often, however,) even this splendid remedy abused by physicians. They have applied it so vigorously and freely as to have destroyed the normal tissue covering the turbinated bones, and some of these cases thus treated will, in all probability, develop into atrophic rhinitis. This is always very unfortunate, and illustrates the fact that these cases require the most discriminating treatment at the hands of a skilled rhinologist, who has made the subject the study, not of a few weeks, at some polyclinic, but of years of painstaking observation. Otherwise will not be recognized the wide difference which is demanded in the treatment of a rhinitis caused by a gastro-intestinal catarrh, a mere venous turgescence, a real hyperplasia of tissue, a deflected or hypertrophied septum, an ecchondrosis, or an exostosis of the septum.

As I said before, I am not a believer in the galvano-cau-

tery. With it, even skillful hands often do harm by destroying too much tissue or causing adhesive bands, but also with it "fools rush in where angels fear to tread." I am sure I give you the facts when I assert that the best rhinologists are beginning to leave off its use. I am still a great believer in the use of the Bosworth saw. The little bow saws lately devised by Dr. Roe, of Rochester, are good, too. In properly selected cases I use the cold wire snare, especially since I began to use the Sajous snare (here shown.) I like the snare better than I used to, and especially is it advisable in the case of patients who live at a distance and are anxious to get home as soon as possible. Of course in the treatment of hypertrophic catarrh, etc., I attach great importance to the use of properly selected sprays, thrown into the nostrils with the atomizer. I generally employ Dobell's solution, and also a very excellent spray advised by Dr. Carl Seiler, of Philadelphia. It is very similar to Listerine. It is cooling, soothing, and to some extent, even curative (in acute cases.) It is advised that it may be as well and more cheaply prepared from the compressed tablets of its components, but I am quite sure that the solution, as made by Lilly, Rogers & Company, of Baltimore, is far superior to solutions I have seen made from any of the tablets.

It is strange that at this late day, some physicians who pretend to treat the nose will persist in the use of strong, irritating astringent washes, as sulphate of zinc and copper, chloride of zinc, salicylic acid, etc. I am positive that such things go a long way in the production of these very conditions which we are trying to cure. Douches and irritating washes in the nostrils do positive harm in these cases. Often have patients come to me for whom physicians had prescribed these irritating astringents, and also powders, with their eyes red and streaming, and their nostrils congested, raw and bleeding. That this was all wrong was proven by the fact

that proper treatment soon relieved them. Another warning against the improper use of cocaine. Three years ago Dr. W. A. Hammond, of New York, in a paper, extoled the use of a local application of a cocaine solution to relieve the turgescence of the nostrils in hay fever. In a paper upon the subject, soon after, I protested against the continued use of such a powerful stimulant, more especially when placed in the patient's own hands. I now reaffirm more strongly than ever, what I then said. Cocaine should be used as a local anæsthetic in surgical operations, and should never be placed in the patient's hands for him to use. Personally I have never known a case of cocaine habit, and I do not think there is a habitual craving for it—like unfortunates crave whisky or morphine. Of course I do not now refer to those who have engrafted the cocaine on to the morphia habit, but it is known now by careful observers that even weak solutions of cocaine to these hypertrophies in the nostril will really and surely increase this condition. I saw this fact fully illustrated in two of my patients. One of them, a highly intelligent young man, had been long troubled with nasal hypertrophy, and a physician had prescribed a two grain solution of cocaine for him with which to spray the nostrils and relieve the engorgement. It had, on the contrary, greatly intensified it, and so great was his distress at times at the unpleasant congestion of the nostrils and frontal sinuses, that he actually feared that he would lose his reason. Another case: a physician, aged fifty years, had used cocaine tablets in his nostrils to relieve the same condition, with somewhat like effect. The general health of both these patients was undoubtedly impaired by the continuous use of such a powerful stimulant. They both left it off, and I have no reason to doubt their statements that they had no trouble in doing so, as they were positive that they felt no craving for it. I am surprised to see that so high

an authority as Dr. F. H. Bosworth, of New York, should recommend, in his new book, the continued use of a spray of cocaine for the relief of nasal hydrorrhœa, a condition which is similar to hypertrophic rhinitis. I will close with some remarks on mouth-breathing.

Continued and careful observation regarding this pernicious habit reveals the fact that it is the cause of, and increases very many of the unpleasant symptoms and conditions above referred to. Usually it is most indulged in at night during sleep. The patient awakes in the morning with a miserably bad taste in his mouth, a dry parched throat and naso-pharynx. It destroys the quality of the voice, brings on intractable sore throat, causes a diseased and hypertrophied condition of the glands of the naso-pharynx, causes the alæ of the nostrils to shrink in, the nostrils to collapse and fill up with adventitious structure, and when the function of the nostril for breathing is thus impaired, it gets rapidly worse and worse. Aural catarrh is very frequently brought on from this cause. To relieve these cases, we must remove the hypertrophies and other obstructions (in the manner above advised). But if we fail to "keep the track cleared" when we have opened it, the habit of mouth breathing is one of the most obstinate things in the world, and we must remember that the patient indulges in it when he is asleep.

Now there has been various plans, such as straps, harness, etc., to close the mouth, but they have failed. For the past few months, I have been prescribing (in properly selected cases) this little instrument, which you see is made of celluloid. Where the nostrils have been opened up by proper surgical means, it has proven to be an appliance of more value, as an adjunct, in the treatment of these cases of mouth breathers than anything I have heard of. They have to be fitted, from an impression of the teeth, for each patient. It

can be easily and comfortably worn, as you see, between the lips and teeth. It is to be worn when the patient is asleep, and he must, of course, be also impressed with the importance of keeping his mouth closed (that is avoiding mouth breathing) while he is awake. I have prescribed these in about twenty cases, and am highly pleased with the aid they have rendered. This subject of mouth breathing is a vast one, and it causes a vast deal of trouble of various kinds. If a patient breathes through his mouth we must reflect that, the air which he takes into his bronchial tubes and lungs does not get the benefit of the several degrees of warmth, and the pint of necessary moisture which it should and would get by traversing the natural channel, the nostrils, during twenty-four hours' time. Nor is it filtered of the filthy and poisonous germs which may be afloat in the atmosphere. I hardly think that hypertrophic conditions are so much caused by mouth-breathing as they are made worse by them. I rather think that, aside from deformities, hypertrophies are the result of uncured "colds in the head." However, both hypertrophies and mouth-breathing are greatly intensified, one by the other.

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DISCUSSION OF DR. COTTER'S PAPER.

Dr. Calhoun, being first on the programme to discuss Dr. Cotter's paper, said that he had been much pleased with Dr. Cotter's paper. The question of revision of the old operation for cataract had been one in which he had felt considerable concern. As to whether it promised better results, or as good, as the ordinary irridectomy was a question which had interested him no little. At a recent visit to Dr. Knapp's Hospital he had asked as to the visual results of the old and the new operation, and the answer was rather of a negative character. The new operation was open to two objections. One was the tendency of a return of the cataract; the other, the

risk of prolapsus of the iris. So that from the present outlook he could see no good reason for abandoning the irredectomy as practiced for the last twenty years.

He desired to reiterate with the same emphasis as at the last meeting, a year ago, what he then said as to the use of cocaine and bichloride of mercury in cataract operations. He had found that the weaker solutions of cocaine gave the same anæsthetic effect as the stronger, and was less irritating; uses it in the strength of one half of one per cent., and found this to be quite efficacious.

Since he had been scrupulously careful to make his operations under antisepsis he had made a record of successful operations that was surprising even to himself. He had now made one hundred and thirty-five successive cataract extractions without a single failure. This he attributes more to the antiseptics than to any increase of skill in the operation.

He opposes the indiscriminate sawing out of every nasal deviation from the ideal line. He was certain that nasal surgery had been carried too far, as had also the use of strong caustic applications to the nasal cavity. In cases demanding cauterization he favored the actual cautery, a favorite method of its application was by the galvano-cautery.

# THE FEMALE URETHRA: A SOURCE OF TROUBLE OFTEN OVERLOOKED IN OUR GYNÆCOLOGICAL INVESTIGATIONS.

BY K. P. MOORE, M. D., MACON, GEORGIA.

Mrs. C., age about forty-eight, came to me from a neighboring town, some months ago, to be treated for some supposed uterine ailment. She had been married about twent-five years, no children, and had not yet reached the menopause. For quite a number of years she had been a victim to much pain and suffering, and was now almost a complete physical and nervous wreck. Possessed of a fair proportion of this world's goods, she had sought relief in various and sundry ways and places. She had visited many noted springs and health resorts; had suffered many things of many doctors; had taken, perhaps, largely more than her share of legitimate pills and powders, to say nothing of the limitless number of nostrums, blood purifiers, liver and kidney cures, uterine tonics, etc., *ad nauseum*. And yet, like the poor woman we read of in the old book, "neither could be healed of any."

She was rather above the average in culture, as well as good common sense, and being naturally possessed of a sanguine temperament and great will power, she was saved from falling a victim to the opium or some other miserable habit.

Some months previous to her coming to me she had been in an Infirmary conducted by one of the best gynæcologists of our State. That she had at that time some uterine trouble, and that she was judiciously treated, is not at all questioned. She was kept under constant treatment there for several months, and received some benefit, and her general health was consid-

erably built up and improved; and yet she was still an invalid and a great sufferer.

On an examination by the touch I found the vaginal canal considerably smaller than normal for a married woman, with a very considerable amount of vaginismus. The degree of vaginismus present made digital examination somewhat painful. I interrogated her liege-lord in reference to coition, and was informed that he had rarely ever enjoyed so intimate a relation with her for a number of years, on account of the extreme pain which it gave her.

The uterus was in its normal position, somewhat atrophied, and pretty freely movable, and while there was some irritability of this organ, yet I could not find sufficient disease of the uterus or ovaries to account for her condition. She had passed through the hands of some skillful gynæcologists, who I felt sure had given her the very best treatment, so far as treatment directed to the uterus should go.

A short while before this, I had fortunately had the pleasure of attending a number of old Dr. Emmett's clinics at the woman's hospital in New York. At one of these he did his button-hole operation, and dwelt at some length upon female urethral troubles, and their long train of nervous consequences. Having only so recently had my mind thus impressed, I naturally fell to investigating in this direction for an explanation of this patient's condition.

Hid away in the urethra just a little way behind the meatus, I found what I feel almost sure was the true origin and constant source of this good lady's long years of patient suffering and broken health.

On the inferior wall, and just within the urethra, were two papillary angiomata, not larger than a very small pea. These growths were exceedingly sensitive to the touch, and would bleed upon manipulation. It required but very slight

pulling open of the meatus to expose the nearest one to view, and indeed, while it was not actually in sight without opening the meatus, yet it was so near as to give a slight pouting to the meatus. The other was a little to one side of the urethra, and from a quarter to half an inch behind the first one. These insignificant little tumors had, on the principle of a fissure in ano, set up a train of reflex neuroses that had undermined this patient's health and constitution, and made shipwreck of her health, and life a miserable burden.

This case is reported to illustrate the force of the idea set forth in the title of this paper; and Dr. Emmett was eminently correct when he laid at this door the origin and source of many female troubles. There can be no question but that we too often pass by this cave of concealment in our eager search into the deeper anatomical researches for the enemy of female health. Here he often lurks unseen and undiscovered, and thus having full and undisputed sway, plays sad havoc with many a nervous system, and makes miserable wrecks not only of the poor women themselves, but often of the happy household over which they preside.

It is not my purpose to go into the *many* pathological conditions and changes to which the female urethra is subject. Indeed, in a short paper like this, I could not go at length into the discussion of *any* of them. Yet it is well in passing to mention that we *may* have to deal with such affections, for instance, as dilitation, culminating—it may be in urethrocele—stricture, dislocations, prolapsus, urethritis, both specific and non specific, ulceration, catarrh of skenes, glands, etc., and while it is true that these conditions are not very frequent, yet we should not be unmindful of their *possible* existence in *any* case, and govern ourselves accordingly.

It is my purpose to speak more particularly of what may be termed *new* growths, and even among these their name

may be called legion; for the *urethral* growths and tumors are similar in character and organization to analogous structures of other parts of the body, and subject to the same laws and causes; and hence the same varieties are found here as elsewhere in the human system. For instance, we may have urethral polypi, fungoid excrescences, fibroma, sarcomo, or epithelioma; but on account of the infrequency of their occurrence, and with no desire to lengthen my paper beyond proper bounds, I will not consume the valuable time of this presence in their discussion.

Varices, or urethral hemorrhoids, is another pathological condition, sometimes superinduced by prolapsus or other uterine displacement.

My object in the mention of these various possible conditions of the female urethra is to emphasize the importance of a thorough search into *every* case brought under our notice, even though there was no *very decided* symptom pointing in this direction. Narrowing this paper down, then, to the one most frequently encountered, as well, unfortunately, as the one which gives the most distressing results, viz.: papillary angioma, or caruncle, I propose to give some of the most prominent symptoms indicating its existence.

Except fissure in ano, there is probably no pathological condition of such apparent innocence and insignificance, capable of producing such a train of distressing and baneful consequences. These growths produce symptoms which bear no relation to their size. In the case reported in the beginning of this paper, the tumors were quite small and insignificant, compared to the general consequences which they produced. Nor was there any very emphatic or decided symptoms which were *purely* referable to the bladder or urethra. The *exquisite sensitiveness* and *pain* on mecturition, so often present in these cases, was comparatively absent in this.

Dr. William H. Baker, of Boston, in the American System of Gynæcology, says that, in his experience, there is no affection of the genito-urinary apparatus capable of producing such a total wreck of the nervous system, and such a condition of utter misery as urethral caruncle. He thusdescribes a typical case: "These growths are characterized by their exquisite sensitiveness to the touch and to the contact of urine. A caruncle no larger than a pin's head may cause the most intolerable agony with each act of micturition. This pain may be simply the result of friction of the stream against the tumor; but more often the distress is greatly augmented by a reflex vesical spasm, which renders micturition extremely difficult and painful, at the same time that its frequency is increased. The vaginal sphincter also participates in this reflex irritability, and a permanent vaginismus often renders coitus absolutely impossible. Walking, or even sitting is painful to these patients, especially when the tumor protrudes more or less from the meatus. Hemorrhage from the growth is a prominent symptom in many cases, and a high grade of anæmia is often produced. Eventually the appetite begins to fail, the sleep is broken, and this, together with the constant worry and distress, and the not infrequent hemorrhage, may reduce the patient to a condition of physical and nervous exhaustion and debility such as is usually found only with serious constitutional disease."

Only a few days ago a patient came into my office with haggard looks, with pain and anguish delineated upon her face. It was not necessary to hear her tale of woe to be assured that she suffered. Her stomach had been made the receptacle of many a nauseous dose—copaiba, cubebs, turpentine, iron, the potashes, etc., had been given, and, of course, she was none the better for it all. I at once suspected urethral caruncle, and from the pain experienced at the mere touch of the

vulva and meatus, I would almost have sworn to the diagnosis before seeing the urethra.

As before stated, the amount of pain and constitutional disturbance is not necessarily in proportion to the size of the caruncle. On account of their size and situation they often escape our attention, and we are apt to charge up the effect to some other cause. It is true that we often find very distressing symptoms referred to the urethra, when this organ is in a healthy state, or, at least, free from any organic lesion. We sometimes encounter cases where micturition is accompanied with considerable pain and tenesmus, especially so during the menstrual period, in which there is no organic change of the urethra, and the only explanation which we have to offer is that of reflex neurosis; yet this fact should make us none the less careful in our investigations in any given case. A Jarvis speculum or an ordinary pair of dressing forceps will usually enable us to clear up the diagnosis. The favorite habitat of these growths is the immediate vicinity of the meatus, and usually on the floor of the urethra.

The object and scope of this paper would not allow any lengthy discussion of the differential diagnosis of the several new growths found in the female urethra. Indeed, so far as the *treatment* is concerned, it makes but little difference as to the *character* of the tumor, the indications are the same. As to the best remedies, in my judgment the knife stands at the head of the list. Excission, as complete as it is possible, is by far the most expeditious, as well as the most effective means of cure. Unfortunately the papilliary angiomata, while it is the most distressing and most disastrous in its results, is also the most prone to return after treatment; hence the importance of making the removal as *complete* and *thorough* as possible. My rule has always been to make as clean and complete excission as possible, and then, in order to make assurance

doubly sure, to cauterize the base or stump. The hyper-sensitiveness of these growths would certainly make the operation a painful one; yet in operating on at least a half dozen or more during the last year I have rarely found it necessary to administer an anæsthetic. I have always succeeded in producing sufficient local anæsthesia by cocaine. I introduce into the urethra a pledget of absorbent cotton saturated with a four per cent. solution of cocaine, and usually find at the end of fifteen or twenty minutes that the operation can be done with but little pain. The cotton is twisted loosely upon a sound, a tooth pick, match, or something of this sort. After it is sufficiently cocainized, I open the meatus and urethra sufficiently to bring the growth into view, and then seize it with a pair of bulldog forceps, or if of much size and broad base, with a small vulsellum, and with curved scissor cut the whole thing out. Should the base be broad and flat, and any doubt be had as to the completeness of the removal, I should use the curette, and then if accessible, should use a Paquelin cautery, or what would be as effective, a red hot wire. In a tumor of so much vascularity we would naturally expect considerable hemorrhage, but I have never yet had any trouble in arresting hemorrhage by pressure, and the application of caustics. Should much trouble be encountered on account of hemorrhage, a large and closely fitting bougie or sound would arrest it, and this might be allowed to remain in the urethra for some hours if necessary. We should never lose sight of the fact that much harm may be done by lessening the urethral caliber in this operation, and while excision should be *complete* and *thorough*, in order to prevent a return of the growth, yet it would be an unfortunate result if we should superinduce a contracted urethra by the operation, a result almost or quite as bad in its consequences as the disease we seek to cure.

The subsequent management of the case would be such as would suggest itself to any thinking man. The vaginismus is to be overcome by dilitation, and the soothing sedative local applications and douches. Of course the general condition of the patient should be looked after, and such constitutional treatment and management instituted as might from time to time be indicated.

There is one condition of which I wish to speak, and to which I have seen no reference in any of the literature to which I have had access. Indeed, my observation and experience in this direction is too limited to offer the suggestion as a settled question, and yet it is quite a rational one, and I believe that further clinical observation will confirm my opinions. It seems to me that these neoplasms might be divided into irritable and non-irritable, or sensitive and non-sensitive growths.

I have referred in this paper only to the sensitive or irritable neoplasms, and briefly mentioned the symptoms which their presence causes. And I now invite your attention to the other class of new growths, and which, on account of the absence of acute sensitiveness, are very liable to be overlooked in our gynæcological investigations. During the past several years, since I have had more gynæcological work to do than formerly, I have occasionally met cases of general decline and a large amount of nervous irritability and pain, particularly of the hips, back and pelvic region generally, for which I could find no adequate explanation in the uterus or ovaries, and, upon making a more careful search, have found urethral neoplasm sufficiently large to lessen the caliber of the urethra, and set up a degree of local inflammatory condition ; and yet, so far as these patients themselves knew, they had suffered but little if any inconvenience from their presence. On account of the absence of pain, I have denominated these growths

"non-sensitive," and yet their existence is capable of producing a considerable amount of reflex nervous disturbances.

I mention a case which comes to mind just now, as illustrating very forcibly the idea I wish to advance. A lady sixty years old, mother of several grown children; menopause twelve or fifteen years ago; general health had for several years been failing. She was now suffering with considerable backache, pains in lower part of abdomen and pelvis; indeed, the usual train of nervous symptoms and general malaise, loss of appetite and flesh, etc., which usually accompany a considerable uterine and ovarian disturbance. It was the belief that she had some womb trouble, which prompted her to apply for medical advice. To the touch the uterus and appendages seemed to be normal for one of her age. The uterus was somewhat atrophied, about the normal mobility, and with little or no sensitiveness. There was no reason for examining the urethra or bladder by the touch. As she did not make any complaint in this direction, this was not done. I placed her in Sims' position and introduced a Munde-Sims speculum, and, as is my custom, I cast my eyes first upon the meatus, and here I found to my surprise a chronic inflammatory condition of the meatus with a considerable area around it in the same condition.

There was some discharge of a muco-purulent character, and on account of the presence of the neoplasm the caliber of the urethra was considerably lessened. This obstruction to the free flow of urine had caused a dilitation of the canal back of it, and hence bagging down of the urethra amounting almost to a urethrocele. This seems pretty clearly a case with a long train of reflex neuroses traceable to the condition of the urethra; and yet so far as the patient knew, she was in utter ignorance of the existence of any local trouble, there being no sensitiveness of the parts sufficiently marked to direct her attention to it, and she was surprised when I

informed her of its existence. It perhaps came on so gradually, and so insidiously in the beginning as not to set up anything like an acute inflammatory condition, and when the irritation did supervene, the neurotic irritation was reflected, and thus brought on the general malaise and ill-health which we found existing.

If a contracted meatus in the male is capable of producing so much neurotic disturbances, while the patient is still in ignorance of any local irritation, why should not the same cause produce the same effect in the female? Varying of course in intensity and degree, in proportion as the male urethra is more complicated in its construction and anatomical relations, than the female.

Pressure on the urethra and the introduction of the urethral speculum did cause this patient some pain, just as the introduction of the bougie into the male urethra when it reaches the point of irritation gives pain. But the point I wish to emphasize, and the one to which I do not remember ever to have seen reference made, is the possibility of the existence of a local trouble in the female urethra of sufficient consequence to superinduce all these neurotic symptoms, and general ill health, and yet the patient would give absolutely no history to lead us in this direction in our investigations of the case.

In his fine work on Diseases of Women, Skene mentions the condyloma as "a growth of low grade" and "painless." He also says on page 840, that "The pain in any of these new growths is not always *confined* (italics mine) to the urethra, but may be felt in the back, hips, suprapubic region, thighs, knees, and feet." But he does not mention in his well written and elaborate treatises of the bladder and urethra, the possible existence of the conditions and results as I have just described them, without the existence of local symptoms.

DISCUSSION OF DR. K. P. MOORE'S PAPER.

Dr. J. G. Earnest, the first gentleman appointed to discuss this paper, said that he had been greatly interested in the paper, and that he fully endorsed the views of the writer; he especially emphasized the *thorough* excission of these new growths, as had been recommended in the paper read. He did not doubt but that the general practitioner was too apt to overlook these obscure local troubles, and that treatment was often directed to the bladder and sometimes the womb, when, in reality, the vesical irritation was merely a result of the existence of some local trouble in the urethra. He thought the paper presented by Dr. Moore was timely and pertinent, and would be fruitful of good.

Dr. Virgil O. Harden next followed in the discussion, and said he could fully endorse the views expressed by the author of the paper, and thought with Dr. Moore and Dr. Earnest that the excission of urethral caruncle should be thorough and complete, yet he would drop a word of caution against the destruction of too much mucus and sub-mucus tissue, for fear of leaving a cicatrix, and thus producing a diminution of the urethral caliber, which, he thought, would be a worse condition than the existence of a caruncle. He would also caution against too much dilitation of the urethra for fear of paralyzing this organ, and in this way set up an incontinence, a condition much to be deprecated. He thought that these urethral troubles were rather more over-estimated than under-estimated, and that we frequently were disposed to charge up to the urethra and bladder trouble which were located at the uterus and ovaries; especially was this the case during the catamenial period. He had often found reflex symptoms of very urgent character referred to the genito-urinary organs, when these organs were in a healthy condition. He referred to one remedy which had been merely touched upon by the author of

the paper, as one promising great good in the treatment of a great many urethral and vesical diseases, viz.: Emmett's button hole operation. He thought that it possessed a simplicity in its execution, and gave relief of a far more decided value than was generally accorded to it. The operation, he was sure, could often be done and a cure effected without the patient even knowing that she possessed a new or artificial meatus. And he looked upon this operation as a means of cure in many of these troubles, superior to dilitation or cauterization.

# STRICTURE OF THE MALE URETHRA AND FORMS OF NEUROSES.

BY R. O. ENGRAM, M. D., MONTEZUMA, GA.

It is not my purpose to enter into an extended notation of the various forms of nervous phenomena that are developed by stricture of the male urethra; to do so would require much time.

I will briefly note two or three which to a greater or less extent, are frequently present, but no doubt are attributed most frequently to other than the right causes.

Blisters, hypophosphites, strychnia, belladonna, morphia, digitallis, cactus grandiflora, pepsin, electricity, porous plasters and counter irritants, and all like applications and therapeutics, no doubt have been woefully misapplied by being administered to suffering men, where a mealotome, urethratome or sound would have avoided months, perhaps years, of miserable mental and physical suffering.

I will first bring to your attention

## VARICOSE VEINS.

That stricture produces varicose veins of the lower extremities I am now satisfied after extended observation, although at one time I labored under the impression that the varicose veins that were occasionally brought to my attention by my patients were the consequence of urethrotomy, or the after dilitation I practiced. That this may occasionally supervene upon the use of the sound is quite probable; yet I now believe it to be more from resultant changes already produced by a diseased urethra, and only occasionally precipited by dilitation.

Varix, following stricture, has been so frequently brought to my notice, that I make it a rule to inquire before exploration, if there be varicose veins; and if consulted for varix I inquire at once into the condition of the urethra; frequently I find the two associated together in the same patient. Operation for the coarctation always facilitates the cure of varix.

I, now, never operate for varix in the male without consulting the uretha, and never in the female without consulting the bladder and organs of generation.

All surgeons who have much experience in the treatment of the male sexual organs, are aware of how frequently they encounter hemorrhoids in these troubles; and gynæcologists appreciate the association of hemorrhoids with diseases of the uterus and urinary organs of women.

As to the causes of these varicose conditions we may be warranted in assuming that the vasomotor centers are very violently disturbed by the reflex vibration set up from coarctations occurring in the urethra, or other forms of urethral irritation. Such irritation through the pudic nerve causes spasms and dilitation of the veins, increased blood flow, if not stasis, temporarily complete, permitting a loss of elasticity of the muscular coats of the blood vessels, dilitation, impaired vascular action, loss of proper nutrition of the parites of the vessels and consequent varix.

### ATAXIA.

Among other neuroses is a peculiar condition approaching Ataxia. I formerly attributed these symptoms to a depressed form of spinal irritation, or neurasthenia; there being present a "nervous weakness," with pain in the lumbar and dorsal regions, with subdued tenderness over the spinous processes, accompanied with a burning tension, dyspnœa, oppression, palpitation and numbness of the scalp. On exercise, a weary, heavy sensation with muscular pains, arise, also excitable

nervous system, with loss of virile powers, more or less complete, premature ejaculation, loss of will power, with deficient judgment and memory. At times excruciating pains in the back of the legs, and other neuroses that might lead us to believe that neurasthenia, more or less complete, might exist.

Ataxic symptoms are sometimes very prominent. I give a brief history of a case:

M., age 49, white, had gonorrhœa some twelve years ago; drank freely. About a year previous to my connection with his case he had some failure of his appetite, loss of flesh, irritability and loss of judgment and impairment of memory, which previously had been extraordinary; intelligence but little impaired. Became extremely restless; great pains in the calves of the leg; marked sciatic pains; considerable hyperæsthesia of the cutaneous surface, over part of the body and lower limbs. Spinous processes of lumbar region very sensitive; excessive tension in the limbs. Ascent and descent of stairs could not be made without assistance. Locomotion at night impossible without guidance of a servant, unless the moon shone brightly, then only indifferent locomotion; various dyspeptic symptoms arose and resisted treatment. The attending physician attributed the condition to some form of paresis arising from excessive use of alcoholic stimulants.

After an extended treatment with strychnia, faradisation, tonics and phosphates, with no relief, the patient fell into my hands. He had all of the enumerated symptoms, with *cincture feeling* or constriction about the girdle. He said he felt as if he had an "anvil" in his stomach. The hyperæsthesia of the surface of his body and lower limbs was so great that they would scarcely admit the pressure of examination. Deep pressure in either hypogastric region, along the course of the lumbo, sacral cord, and great sciatic, caused excrutiating pain. The stomach felt as hard to the touch as a cast ball. The eye

had a bright, watery stare, I might say, a brilliant stare, with dilated pupils, contracting hesitatingly to light.

When I inquired into his powers of locomotion, he expressed his confidence freely in his ability to walk; nevertheless his gait was uncertain. On being blindfolded, locomotion was entirely prevented. I drew a ring three feet in diameter upon the carpet, and requested him to walk out, or run out, if he could. He affirmed most confidently that he could if I would prevent his falling into the grate. On attempting to walk out he made no progress, but alternately raised his feet up and down, in a fair imitation of a raw militiaman's attempt at marking time. Imagine his great surprise on being unblindfolded at finding himself still in the ring.

Deep pressure in the perinæum elicited great pain, so much that I feared deep-seated abscess. On the introduction of a No. 8 exploratory bougie, which was with difficulty accomplished, convulsions seemed imminent, in spite of cocaine previously used. Spasmodic contractions of the fingers and toes were violent, and persisted for an hour, so great was the hyperæsthesia of the urethra. A brown discharge was brought along with the withdrawn sound. Exploration revealed coarctation No. 8 at two and one half inches from the meatus, which the patient had never suspected, nor which had given inconvenience except an occasional irritable condition of kidneys and bladder, so he said. He had not slept for weeks except under anodynes.

Dilating urethrotomy in twenty-four hours greatly relieved the locomotor atoxic symptoms. Much of the hyperæsthesia had passed away; the *cincture* had grown less distressing; the "anvil" in the stomach had grown smaller, and prolonged and refreshing sleep supervened—all without a single dose of medicine.

This operation was performed three months ago, (January,

1890.) The patient formerly weighed 240 pounds; had reduced to 169; now weighs 205 pounds, with all of his troubles dissipated.

This is, of course, an aggravated case. I have observed varying degrees of these atoxic symptoms, from the slightly unsteady gait, through varying stages, including sycope, intractable reflex dyspepsia, palpitation, basilar headache and a long train of reflex irritations.

I now call to mind two patients, one of whom, upon the least excitement, would fall into a most alarming case of vertigo. The other, of very high strung, irritable temper, nervous and irrascible to a very distressing degree, would go into violent tetanic spasms of the muscles of the hands, as is sometimes observed in hystero-epilepsy, upon having his feelings wounded, which could be easily done upon the least provocation.

Both these patients suffered intense pain along the sciatic nerve. Urethrotomy and galvanism gave them prompt relief, with no return of their troubles now—two and five years past.

TROPHIC AFFECTIONS OF THE SKIN.

Neuro-dermatitis, I am convinced, is a frequent result of urethral irritation, and especially herpitic eruptions of the penis, and more especially of the prepuce on the inner surface, or at the junction of the skin and mucus membrane. Why not? Herpes of other parts of the body has long been looked upon as of neurotic origin. Few writers now deny that zona and zoster are from some unhealthy excitation of the nervous system. Still, none have inquired into the fact that urethral irritation might set up these trophic disturbances of the skin in widely divergent parts of the body.

"Herpes præputiallis," says Pepper, "is met with in persons who have been afflicted with gonorrhœa, chancroids and chancres, and a long prepuce is a predisposing factor."

He lays stress upon those who have been affected with gonorrhœa. Truly they are more subject to urethral irritation and stricture; hence to herpes præputiallis. Professor Felix von Neimyer passes over the subject of stricture with a bare notice, not mentioning such a thing as reflex. Abner Post leans to the idea of nerve irritation. Muriac looks upon it as neuralgia. Yuna attributes it to excessive congestion of the genitals. Tilbury Fox says, "herpes præputiallis has come on after emission, after connection regularly, so as to leave no doubt as to the co-relation; and after other irritations of the urethral mucous membrane." Professor T. Holmes, Surgeon to St. George Hospital, dismisses the subject of herpes præputiallis with scarcely a notice, except to speak of it as being easily cured, and to draw its diagnostic difference from incipient chancre. Professor S. D. Gross attributes the disease to friction, want of cleanliness and disorders of the digestive organs.

So none have attributed to herpes an origin from stricture. It is true that Tilbury Fox borders upon the subject when he says, "after other irritations of the urethral mucous membane." Abner Post says "nerve irritation," but is not specific; does not name the source of irritation. Muriac says "neuralgia." He fails to say whether the neuralgia is set up by miasm, cold, indigestion, or what form of nerve irritant.

To illustrate, I cite a case: G., age 43, white, married, no history of syphilis. Digestion fair. Had gonorrhœa fourteen years ago. Herpes upon glands and prepuce. Prepuce thickened and sensitive. Pain from the eruption sometimes very severe. Marked sciatic pains, with weary, distressed feelings in the back of the legs. Herpes upon the prepuce and glands of penis of twelve years' duration. Had exhausted the materia medica, professional and lay, taken anti-syphilitics, anti-neuralgics, hypophosphites, strychnia, arsenic, ointments and plas-

ters, and every conceivable officinal and patent blood purifier known and obtainable, without the least impression upon the disease. I saw this patient six years ago, in consultation, and advised urethral exploration, but it was not encouraged by the attendant nor patient. I lost sight of this man until last September, when he consulted me in my office. I reiterated my former opinion, and, upon exploration, verified it by discovering a stricture No. 17 at one inch from the meatus; another, No. 20, at five inches. I performed dilating urethrotomy up to No. 31, and dilated with conical sounds for one month. Used no medicine external or internal, and in twenty days, for the first time, an eruption of twelve years' standing had vanished. In two months all inflammatory deposits had gone, and the parts looked normal and healthy. I had a letter from him on the 9th of April, this year, (1890,) stating that he remained well.

Another very interesting case I had in 1875, in a young man who had an herpetic eruption upon the glands and upon the prepuce; externally all over the penis and left scrotum; around the navel; on the throat, just covering the pomum adami. The internal throat, and especially the tonsils, were herpetic; an eruption extended along the course of the popliteal nerve for about three inches. Occasionally the eruption would diminish, but not disappear; but on excessive venereal indulgence would be aggravated.

This patient was a midshipman in the Navy; and on an extended cruise the eruption very perceptibly faded, and he hoped ultimate relief was at hand; but on his return, while stationed at Annapolis, he engaged in an excessive venereal escapade, which brought back his old trouble so severely that he applied for and obtained a furlough, when he fell into my hands; and, upon exploration, I found a coarctation, No. 22, three inches from the meatus. Dilating urethrotomy up to 32

entirely relieved him in a few weeks. The last I heard from him, two years ago, he had suffered no return from his old trouble.

Recurring to the involvment of the tonsils in this case, I will say, in conclusion, that I have frequently noted throat complications of various kinds in urethral irritation, especially in young subjects. The frequency of hypertrophy of the tonsils and elongated prepuce existing coincidently in little boys, has led me to question if they are not interdependent.

Hypertrophy of the tonsils in females, where the uterus is involved, has frequently attracted my attentiou. I do not now call to mind a single incident where I have been consulted for hypertrophic tonsilitis in young girls who did not develop some uterine complication when womanhood was reached, or some intractible menstrual disorder at puberty, or following soon thereon. I cannot attribute this to struma, except the seeds of struma were sown primarily in the undeveloped and immature uterus, for I have yet to find a single case of enlarged tonsils in young girls that did not improve when menstruation was normally established, without regard to the therapeutic applications whether directed to the tonsils or not. Relief from menstrual and uterine troubles note a period of improvement in hypertrophy of the tonsils of females. So relief of urethral and præputial irritation marks a period of improvement in hypertrophy of the tonsils in the male.

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DISCUSSION OF DR. ENGRAM'S PAPER.

Dr. Gaston was the only one present of those named to discuss the paper of Dr. Engram, and he proceeded to make the following remarks:

The views of the author has taken such a direction, as to further elucidate the reflex manifestations of præputial irritation, which has played so important a part in neurotic devel-

opments, and to sustain the views of Baker, Brown and others in regard to the sympathetic relations of the nervous system to disorders of the clitoris.

The intimate connection of urethral troubles with constitutional disturbances are recognized generally by the profession. But the dependence of cutaneous eruptions upon stricture and other abnormalities of the urethra, pointed out by the author of this paper, is a revelation to me. It may be that others more conversant with the history of these dependencies may be aware of such results, but I must confess that the report of these cases opens up a new field of investigation to me. We cannot ignore the relation of cause and effect, when the disease of the skin persists until urethrotomy relieves the stricture and then promptly and completely disappears. The point made out by actual demonstration of facts, as in these operations, must be accepted. It is not a mere hypothesis or theory, nor an induction from recognized data, nor a conclusion from premises which are granted, but an undeniable truth based upon the observation of facts by the author. We cannot, however, accompany the author in all his views, as, for instance, when he attributes varicocele to urethral trouble, for it exists frequently without any concomitant of this nature, and no instances are cited in which the varicocele has disappeared after operating, or other measures of relief addressed to the urethra.

The ataxic phenomena said to be relieved by dilitation of urethra are not conclusively demonstrated, and other cases referred to as proof of the relation of remedial agency to the desire, are not satisfactory evidence of cause and effect.

The reciprocal reaction of the tonsils and womb in girls appears rather strained and far fetched, while there are no statistics presented, showing that girls are any more liable to enlarged tonsils than boys of like age. We do know, how-

ever, that nervous disorders in females often depend upon local irritation of the genitalis, and especially the cliteris, which has been removed with signal relief to the nervous disturbance.

In this connection I may advert to a relation which is supposed to exist between seminal emissions and contracted meatus or urethral strictures of large caliber. We have been accustomed to recognize the efficacy of the introduction of cold metallic sounds and cauterization of the vesicular seminals with the instrument of Lalemand or other apparatus, but have not relied upon cutting or dilating strictures for a cure.

It is a well established fact that involuntary discharges of semen isdependent upon an atomic state of the nerve-centres, and whatever tends to build up the vital powers is calculated to give relief to this irritability of the ejaculatory function of the seminal vesicles. The resort to violence upon the urethra has been carried to such an extent in the treatment of seminal weakness as to cause great suffering to the victim, and without, in my judgment, any rational ground to expect relief. A patient came to me recently with the entire structure of the penis inflamed and one testicle greatly swollen, who had been undergoing incision of the meatus and forcible dilitation of the urethra, with a view to cure involuntary seminal emissions. After several days' treatment of the fever and constitutional disturbance, which resulted from this meddlesome surgery, my attention was still required for the local troubles, with which he was not only confined to his room, but kept in bed for some weeks. Whatever may be the effect upon his seminal weakness, the suffering was little short of that by excision of the penis and testicles, which was self-inflicted by a sufferer in Atlanta, two years ago, in a fit of desperation over his lot.

Being always open to conviction from the experience of others in any department of practice, I would like to know if

any of the members of this Association have secured benefits from this kind of treatment for involuntary seminal emissions. All are aware of the intimate sympathy of the nervous system with the urethra, and even the introduction of the catheter for evacuation of the bladder, independent of any abnormality, leads at times to considerable constitutional disturbance. In old subjects, with atony of the bladder or enlargement of the prostates, requiring the use of the catheter, it is not uncommon to find it followed by what has been styled as urethral fever, and great stress has been laid upon this by English authors, as a warning against the unnecessary use of a catheter.

A practical deduction from the consequences of introducing sounds after dividing strictures has led to the practice of dispensing with all means of dilitation after internal urethrotomy. While residing in Rio de Janerio, for the purpose of being examined for my recognition by the Imperial Medical Academy, I witnessed an operation by Professor Sabria, for the division of stricture with Massoncura's instrument. The sound was passed once to verify the complete division of the stricture, and not repeated for ten days, without any sign of contraction. At the end of another ten days, the sound was again passed without any difficulty, so that the patient was considered as cured. I have had occasion to adopt this procedure in a number of cases, with a most satisfactory result, and if the stricture is completely divided, there is no kind of need afterwards for the sound or bougie. On the contrary, the margins of a divided stricture tend to gape apart, and the irritation of a bougie develops cicatricial tissue, while rest favors the absorption of the fibrous deposit and promotes the cure of the stricture.

# THE HISTORY OF AN EPIDEMIC OF RABIES IN THE SEVENTH CONGRESSIONAL DISTRICT.

BY T. M. HOLMES, M. D., ROME, GA.

Rabies and hydrophobia are terms fearfully wanting in pathological significance—the former being from the Latin *rabidus*, meaning madness, and the latter from the Greek *hudar*, water, and *phobia*, fear—a fear of water; but because of our limited information concerning the pathology of this disease, we are compelled to denominate it by terms expressive only of its conspicuous symptoms. Physicians and scientists have been for years endeavoring to unveil the mystery that conceals the exciting cause and the pathology of this disease from the eyes of the medical world, but as yet nothing has been evolved as the result of their efforts but conflicting theories. The symptomatology and various phenomena that characterize it, as well as the media and mode of its transmission, are familiar enough even to the laity; but the morbific agent that produces it and the pathological lesions and perverted physiological functions have never been fully determined or found to be invariable.

With regard to a morbific agent, rabies occupies rather a unique place in the category of contagious diseases, since the presence of such a pathological factor in nearly if not all diseases of this character has actually been demonstrated under the microscope. We only know that there is in this disease a virus that is transmissible only by inoculation; and by analogy that the active agent of this virus is probably a micro-organism; that it has a period of incubation varying from a

few weeks to years, finally terminating the life of the victim usually amid the most terrific clonic convulsions.

During the expidemic of rabies that prevailed in this section in 1886 and 1887 I had an opportunity of observing some of the phenomena that characterize this disease. The first case that came under my observation was that of a young negro man, of this city, who, while walking the streets of the village of Cave Spring, in June, 1886, was bitten on the hand by a passing dog that attacked him ferociously. He had nothing done for the bite at the time, but came to my office the next day to consult me about it. I advised him to have it cauterized as a possible, not a probable, means of doing good at so late an hour. He refused to pay for having it done, but consulted another physician who gave him the same advice. He again declined to pay for it, and went his way unmindful of the consequences. He dismissed the matter from his mind altogether, and was married in three or four months with much pomp and splendor.

In February, 1887, eight months after he was bitten, I was sent for to see him, and found him in bed, exceedingly restless, with gastric and frontal pains, a wild expression out of his eyes, great sensitiveness to noise, and great thirst, though absolutely intolerant of water. There was no elevation of temperature, but his pulse were quite rapid, which was in keeping with his general nervous excitability. He was in a very uneasy state of mind, his symptoms were expressive of much suffering, but gave no definite idea of any disease such as is met with in daily practice. He declared he had been poisoned, specified the man who did it, knew he was going to die, and hated very much to leave his wife. He also complained of a dryness and constriction about the throat. I prepared a dose of bromide of potash and chloral for him, but he quickly informed me that he could not swallow, but after being pre-

vailed upon to attempt it he did so, but if I had not held to the tumbler myself he would have spilled the entire contents of the glass on the bed. He had no control of himself whatever. The moment he began to drink he shook convulsively, his arms jerking, his lips quivering, and the water regurgitating from his mouth over everything as when one is strangled with a fluid, evincing the fact that the muscles of deglutition were thrown into involuntary spasmodic action. It was too apparent that he could not swallow. I then gave him an hypodermic of one-fourth of a grain of morphia, and told him I would see him the next morning; but during the night his condition continued to grow more alarming, and by the next morning he gave up his life amid a storm of convulsive strugglings.

The next morning an autopsy was made by Drs. H. H. Battey, D. G. Hunt and myself, Dr. Battey using the scalpel, and though every viscera of the body was carefully examined not the slightest organic change could be discovered. The piamater and fissures of the brain had a few slightly congested spots, and there were a few slightly echymosed spots in the bowels, but besides these there was no unnatural appearance of any of the viscera. He did not once suspect hydrophobia, but died evidently of a genuine case of the disease that bears this name.

The second case was that of a negro man on the farm of Mr. H. C. Ayer, of this county, who was bitten in the Spring of 1887 by a dog that was passing through the field where he was at work. About a month afterward he was taken very strangely and sent for me. He could not explain his feelings, and could not account for them. He had but little desire for food, and was taken with a spell of nervous excitability that alarmed him. When I saw him he was in bed complaining of frontal pains and great nervousness and insomnia, though he

was perfectly quiet. His pulse were not much disturbed ; his tongue was thick, and his bowels inclined to be constipated. These symptoms were not pathognomonic of rabies, though they suggested it. Nothing was said of his having been bitten by a dog. I gave him a dose of sacharated calomel and prepared him several doses of bromide of potash and chloral. He betrayed no difficulty in swallowing. He did not have the appearance of being a man whom death was about to claim. He died that night, surrounded by a number of his friends who had to hold him to prevent his doing violence to himself.

The third case was the carriage driver of Colonel D. B. Hamilton, of this city. He was a very stout and healthy negro of about thirty-five years of age. It was in the Spring of 1887 that he was bitten by perhaps the same dog that bit so many cattle in this vicinity and of which we shall hereafter speak. It was three months after he was bitten that he was seized with the same nervous, restless, uneasy feelings that characterized the other cases ; and that were so identical with the first that they need not be recounted here. He died as promptly as the others had done with those distressing and characteristic nervous phenomena that never fails to arouse in a spectator feelings of pity.

Out of the three cases this is the only one in which it it could possibly be alleged that death took place as the result of lyssophobia, for in the two first the fact of having been bitten by rabid dogs had passed entirely out of their minds. Moreover, the numerous cows and hogs that died in this community with all the symptoms of rabies, after having been bitten by dogs, could not be accused of having had their minds excited to such an abnormal pitch by fear, as to have produced death, as have been frequently alleged in the case of human beings. The prevalence of this disease among the lower animals in this section elicited a great deal of interest at the time.

Mr. J. F. Boss, one of our well to do and most respected farmers, relates the following history of several cases that occurred on his farm:

In January, 1886, a stray dog with symptoms of hydrophobia made its appearance among his hogs and bit one of them before it could be killed. In a few weeks the hog began to manifest symptoms of the disease by the swelling of its eyes and tongue to an enormous extent, and by an unnatural demeanor. It would run and bite at any and everything, and would grab a stick and run with it in a ferocious manner through the herd as if it did not see them. The rest of the hogs seemed to know that something was wrong and kept out of its way. It refused to eat and drink, or could not do so, and these symptoms were kept up until its death on the fifth day after their first appearance. A few months after this, one evening a very pretty little dog made its appearance among the negroes in one of the cabins, acting skulkingly. One of the men petted it and took it in his lap, when, without provocation, it snapped him on the palm of his hand, but did not bring the blood. It was immediately hurled into the yard, and during the night Mr. Boss heard his fine setter and the little intruder fighting. He ran out with a light and saw that his dog had been bitten on the leg. The little dog scampered off, and was killed a day or two afterward. In a few weeks the setter began to refuse food, and his tongue and eyes became very much swollen, and he bceame timid and tried to shun the presence of every living thing, remaining for hours under the house. When Mr. Boss noticed these strange symptoms he had the dog put in a rail pen six or eight feet high, and placed a pan of milk and bread before him. He immediately tried to partake of it, but the thickness of his tongue would not allow him to do so. Every time he would attempt to eat of it he would jerk back just as if a bee had stung him on the nose.

He was perfectly obedient though, and his mind was as clear as ever. Having gotton out of his pen it was no trouble to get him back again. His master would get in his pen with him and try to assist him in taking his food, but it was impossible for him to take the milk although he seemed very thirsty. Finally he began to snap at himself, and at the rails of which his pen was made. After observing this, his master thought it prudent to stay out of the pen. The dog did not seem to have the power to snap with much force, but several times he tore bark off the rails. Besides this frequently manifested propensity for snapping, he would jump straight up in the air, five or six feet in rapid succession. These strange freaks were his most conspicuous symptoms up to his death on the fifth day after the first manifestation of the hydrophobia symptoms.

During the succeeding Spring Mr. R. P. Nixon, who lives just outside the corporate limits of this city, lost quite a number of fine Jersey cattle from rabies. It originated among his stock in the following manner: One morning, while his cows were being milked, the milkman noticed a large dog pounce upon one of the hogs, biting it several times. The hog ran off, and the dog entered the lot and made a savage attack upon a large Jersey bull, biting at his head, but this animal tossed the dog over the fence, and having such a quantity of thick hair about his head he escaped unhurt. The dog then passed on among the calves and heifers, among which was a cow belonging to Mr. T. F. Howell, of Jersey fame. This cow and a number of the heifers were bitten. In five weeks from that date the hog was taken sick; he refused to eat and drink; would attempt to fight any one coming near him; would run and turn round rapidly and then stand and squeal for hours as if in the greatest distress, and it seemed to have no intelligence whatever. The lot was near the river bank, and one day while wheeling and turning, as it had been doing for sev-

eral days, it tumbled into the river and was drowned. In the meanwhile, Mr. Howell's cow was sent home, three miles away, and though she had been giving a quantity of the richest milk she was found one morning to be entirely dry, and in a day or two she appeared sick, refusing food and water; would make fight at any one or anything approaching, and would either stand and shake her head or stand and low for minutes at a time—rest a little while, and resume again. These symptoms were kept up for about five days, when she died.

Several of Mr. Nixon's milch cows and heifers died in exactly the same way—the first symptoms in the milch cows being the disappearance of the milk.

These animals, hitherto perfectly gentle and kind, became exceedingly vicious and their entire disposition changed. One of the cows was not taken with it until five months after the others, but, like the others, she died in less than a week from the appearence of the first symptoms. Of course it was impossible to determine whether this case was the result of a bite received at the time spoken of above or a subsequent bite, as the disease lingered in this community for a number of months during 1886 and 1887; but no well authenticated case of rabies has been discovered here since the subsidence of this epidemic.

It is unnecessary to recount the course of this disease among all the herds of this district further than to say that the history was essentially the same in them all, and that some farmers lost as many as twenty-five or thirty head of cattle and hogs before it could be eliminated by isolation and death.

# A UNIQUE CASE OF SENILE GANGRENE. AN ALMOST BLOODLESS OPERATION COMPLETED WITHOUT TOURNIQUET OR LIGATURE.

BY ARTHUR C. DAVIDSON, M. D., SHARON, GA.

Rhoda Ivey, age eighty-one years, was attacked some time in March, 1889, with a severe pain in the second toe of the left foot. Pain, without swelling or fever, continued for several weeks, when the great toe, together with the other toes of the same foot, became involved, causing her pain unceasing and almost unbearable, notwithstanding the free use of anodynes and powerful analgesics. About the time the other toes began to become involved the toe first attacked gave evident signs of approaching death, by shriveling and turning a mouldy black.

The diagnosis of senile gangrene—which disease had all along been suspected—was now confirmed.

Notwithstanding the great pain and much restlessness there was no fever—the temperature remaining a little subnormal—no redness, no swelling, and not much soreness upon pressure. The pulse, however, was very small, highly compressible, occasionally intermitting and quite frequent, varying from 110 to 120 per minute. The temperature of the left leg, involving the thigh as high up as its union with the trunk, was constantly found to be more than a degree and a half lower than that of the other lower limb.

All along the old woman retained a remarkably fine appetite. She would frequently exclaim, "Yes, doctor, I can eat anything they will bring me." Gangrene progressed slowly until about the first of August, when a line of demarkation

was very irregularly but distinctly formed around the foot near the instep.

It was now deemed best to amputate, notwithstanding her great age and much feebleness. This the writer did, aided by one regular physician—Dr. Chas. S. Kendrick, and a druggist, Mr. Geo. W. Brown, both of Sharon—on the 10th of August, cutting a little below the knee joint, or about the union of the upper and middle third of the tibia. So far the writer has reported nothing very unusual or remarkable in a case of senile gangrene. It was noticed when the cutaneous and subcutaneous tissues were being divided that only a very little very black, thin, water-like blood escaped.

The writer, finding it somewhat difficult to find the main arteries—the posterior tibial and peroneal—for ligation, had the tourniquet loosened, when, to our great surprise, no blood flowed. We removed the tourniquet entirely, and rubbed the limb downward, but not a teaspoonful of blood could we make to flow. The flesh on the stump looked as bloodless as a piece of steak in the market. We decided not to cut above the knee; and completed the operation without applying a ligature!

The woman recovered promptly and fully from the influence of the anæsthetic—chloroform—and lived three days and thirteen hours, retaining all the while her mental faculties unimpaired, until within six hours of her decease. A little fever set in during the morning of the third day and ran very high just before death, the temperature rising a little above 106 degrees Fah. At no time during the three days was the dressing about the stump more than slightly stained with blood.

Gentlemen, can you explain the ex-sanguienous condition of the limb? Could there have been an obstruction within the popliteal or femoral somewhere along its course sufficient to completely occlude the circulation? Could an hypertrophy

or thickened condition of the walls of the artery somewhere along its tract, or throughout its entirety, have occluded the free circulation? Could a greatly enfeebled condition of the heart aid in explaining this bloodlessness of the leg? Was an embolism the main cause? If so, is it not probable that it was situated above the crural ring? If such a condition existed, how could warmth and nutrition of the limb, below the embolism, be sustained?

We had no opportunity for examining the veins and arteries of the amputated part, nor were we allowed an autopsy. There was no history of a traumatism involving any part of the limb. The urine was normal—at least there was no albuminuria nor glycosuria existing. The right foot and leg seemed to be be in a normal condition; the pulsation in its arteries could be distinctly felt as low down as the instep. This was not the condition with the diseased limb. We could not discover any pulsation anywhere, even as high up as the beginning of the femoral.

Death, we think, resulted from septicæmia, by absorption of septic matter from the whole limb—for the writer thinks that the entire limb decomposed *en masse*.

# TWO CASES OF RARE OVARIAN TUMORS.

BY VIRGIL O. HARDON, M. D.,
Professor of Obstetrics and Diseases of Women and Children, Atlanta College, Atlanta, Georgia.

CASE I.—*Sarcoma of Right Ovary. Ovariotomy. Recovery.*

P. W., age 54, widow, multipara. Menopause occurred six years ago. Has always had good health until April, 1889, when she noticed a lump in the right side which gradually increased in size. About two months later she noticed a general enlargement of the whole abdomen, which increased up to the time when she came under my observation in January, 1890. She had no pain at any time, her only inconvenience arising from the size of the accumulation in the abdominal cavity, which interfered with respiration and prevented her from lying down or walking about with any comfort. Her general health was not seriously impaired although she had lost flesh.

When first seen by me her abdomen was as large as that of a woman at the full term of pregnancy. External examination showed the abdominal cavity to be filled with ascitic fluid. In the right inguinal region could be felt a hard tumor, very movable, floating in the fluid and giving to the hand a very marked sensation of *ballottement*. Its attachment was evidently on the right side as it could not be pushed beyond the median line. The tumor could also be felt from the vagina, but its attachment could not be made out. Diagnosis, solid tumor floating in ascitic fluid, the nature of the tumor not determined.

*Operation January 20th, 1890*—Present, Drs. Kendrick and Harris and the class of students of the Atlanta Medical College. The abdomen was opened in the median line and a

quantity of ascitic fluid evacuated, estimated at three gallons. The tumor, which was free from adhesions, was lifted out of the abdomen. It was attached to the right broad ligament by a slender pedicle consisting of the normal attachments of the ovary. The pedicle was transfixed and tied with silk. The abdomen was sponged out and about a pint of gelatinous material removed. No drainage. The abdominal incision was closed and dressed in the usual manner. The patient made a rapid recovery although her temperature rose to 103.4 on the evening of the second day. She returned to her home completely cured twenty-five days after the operation.

The tumor was oval in shape and had a smooth white surface. One section was found to be perfectly solid and closely resembled in appearance a fibroid tumor of the uterus. It weighed three and a half pounds. At the point where the pedicle was attached, on its lower side, could be seen the remains of the ovary from whose surface the tumor appeared to grow. A microscopical examination was made by Dr. M. B. Hutchins, of Atlanta, who has kindly furnished me the following report:

"I have examined sections both from frozen and from hardened portions of the specimen which you left with me. The disease is sarcoma, and the tumor is made up of both small round and small spindle cells. Blood-vessels are quite numerous in the round celled portions, while I could see none among the spindle cells which were more closely packed together."

Solid tumors of the ovary are rare. Greig Smith says: "Of all tumors of the ovary, probably not more than three per cent. are solid."[1] Of two hundred and eighty-two consecutive ovariotomies reported by Homans only three were

1. Abdominal Surgery, American Edition, page 155.

for solid tumors of the ovary.[2] Of two hundred and seven unselected ovariotomies collected from various operators by the Pittsburg *Medical Review* only seven were for growths of this variety.[3]

In regard to the pathology of these tumors some confusion seems to exist, since the line of distinction has not been clearly drawn between fibroma, myoma and sarcoma of the ovary, the symptoms and gross appearances of which are identical. Howell explains this uncertainty in the following words:

"In discussing the structural elements of the ovary we have already referred to the numerous spindle-shaped cells which enter so largely into the composition of the stroma, the other and chief component being a fine connective tissue. One group of distinguished and competent histologists regard these cells as organic muscle fibres. His even assuming that the whole of the stroma represents merely the hyperplastic *tunicæ mediæ* of the arteries, the adventitial layer of connective tissue being entirely wanting in the vessels of this organ. Others again affirm that the spindle cells represent connective tissue in its immature form. Between these normal tissues of the ovary and the histological constituents of the fibromata a close resemblance frequently exists, though from the changeable nature of the latter, the connection is not always so evident. The intercellular or gound substance of the tumors varies in amount, density and arrangement, while the cells may be few or abundant. It is the presence of these very connective tissue spindle-cells, however, which has frequently caused a true fibrous growth of the ovary to be regarded as a sarcoma, fibro-sarcoma, or cysto-sarcoma."

2. Three Hundred and Eighty-four Laparotomies for Various Diseases, Boston, 1887.

3. Four Hundred and Twenty-two Recent Abdominal Sections, Pittsburg, 1888.

He further says: "The pure round-celled variety of sarcoma attacks the ovary, though very rarely. Besides this and the spindle-celled sarcoma are found mixed cell growths composed of both forms in varying proportions."[1]

From this quotation it is evident that the presence of round and spindle cells in ovarian tumors has not the same significance as regards malignancy as when found in neoplasms of other parts of the body. This view is corroborated by the fact that such ovarian tumors exhibit no tendency to recurrence after their removal by laparotomy.

CASE II.—*Superficial Papilloma of both Ovaries. Ovariotomy. Recovery.*

M. P., age 62, married, multipara. Menopause occurred at about 45 years of age. Health has always been good. In November, 1889, she first noticed general enlargement of her abdomen. This enlargement increased with great rapidity, so that when she came under my care, early in March, she was larger than a woman at full term of pregnancy, and was unable to stand or to lie down but could only sit propped up in bed. She had no pain beyond the inconvenience arising from the bulk of the abdominal accumulation, and strange to say, her general health had not suffered apparently.

External examination showed the abdomen to be filled with ascitic fluid. No tumor could be felt through the abdominal walls. By vaginal examination an obscure mass could be made out in the pelvis on each side of the uterus. Careful investigation failed to elicit any evidence of cardiac, renal or hepatic disease. There was no œdema of any part of the body. The urine was normal. No diagnosis was made. As the symptoms pointed to some diseased condition within the abdomen, it was decided to make an exploratory incision.

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1. American System of Gynæcology, Vol. II., pp. 1,037 and 1,046.

*Operation, March 15th, 1890*—Present, Drs. Harris, Murphey and Kennedy. The abdomen was opened in the median line, and a large quantity of ascitic fluid evacuated. Upon exploring the cavity, the surface of both ovaries was found to be completely covered with papillomatous growths, identical in appearance with cauliflower cancer of the cervix. The left ovary contained a cyst as large as an English walnut, entirely independent of the papilloma. There was no papillomatous growth within or upon the cyst. The right ovary was as large as a goose egg, while the left was as large as a man's fist. The disease was confined entirely to the ovaries, and there were no adhesions to neighboring organs. The peritoneum was normal as far as it was visible during the operation. Both ovaries were removed, the abdomen washed out and closed without drainage. The patient made a good recovery, her highest temperature being 100.2 on the evening of the first day.

No microscopical examination of these ovaries has yet been made, but their symptoms and gross appearance correspond exactly with Olshausen's description of superficial papilloma of the ovary, of which he states that he has been able to find only six recorded cases.[1] Such papillomatous growths are quite often found in the interior of a certain variety of ovarian cysts, but their occurrence upon the free surface of the ovary is one of the rarest of pathological conditions. In addition to the six cases collected by Olshausen, cases have been reported by Munde[2] and by Cushing.[3] Dr. Henry C. Coe, Pathologist to the New York State Woman's Hospital, in a personal communication, informs me that he has seen two cases. Saenger

1. Cyclopedia of Obstetrics and Gynæcology, Vol. VIII., p. 61.
2. American Journal of Obstetrics, January, 1888, page 36.
3. Annals of Gynæcology, September, 1888, page 589.

also states that he has seen two.[4] It is evident, therefore, that the disease is an exceedingly rare one.

There is some difference of opinion in regard to the malignancy of this affection. Saenger says: "It may be considered as a sub-form of cancerous development."[5] Freund also classes it with malignant growths.[6] Tait, on the other hand, believes that there are two varieties of papilloma, one malignant, the other benign, undistinguishable by their gross appearance.[7] In most of the reported cases the patient recovered from the operation but subsequently died from recurrence of the disease.

In all cases of solid tumor of the ovary, ascites forms a constant feature in the clinical history. An important deduction from this fact is the necessity for an exploratory incision in those cases of ascites in which disease of the heart, liver, and kidneys can be excluded. This view is rapidly gaining ground among the profession, and Tait says, unequivocally, that an exploratory incision is preferable to tapping in any case of ascites and involves less danger to the patient. In the second case which I have reported, a diagnosis was impossible without opening the abdomen. By the operation the patient has been relieved of her only troublesome symptom, her life will be greatly prolonged, with a possibility of permanent recovery, since recurrence is not the invariable rule.

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4. Pathology and Therapeutics of Diseases of Women, Boston, 1888, page 500.

5. Op. Cit., page 499.

6. Zeitsch F. Geb. and Gyn., Band, XVII., Heft 1.

7. Diseases of the Ovaries, American Edition, page 147.

# A FIBRO-SARCOMA — THE ADVISABILITY OF ITS REMOVAL.

BY W. L. BULLARD, M. D., COLUMBUS, GA.

MR. PRESIDENT.—Doubtless you are already cognizant of the fact that in the beginning of his career, the physician, surgeon or specialist, is apt, as his patients present themselves, to seek, like the Judges of our Courts, for a precedent; but he will soon discover, whatever has been his hospital or clinical advantages, that all the ills the world is afflicted with are not in the books, and between his professional pride and sympathy, his skill, judgment and nerve will at times be surely taxed. It has been my luck to fall heir to several cases not on the card, or so vague as to fail me a precedent, but none more interesting and puzzling than the one I have the honor to present to-day.

This unfortunate patient is now fifty-seven (57) years of age. He consulted me a little over two years ago, saying that two months previous he had been stricken with severe pain over the eye, which, however, lasted only a short while. He had already consulted a physician who prescribed some eye drops. When I first saw the case there existed no external abnormality, save an insufficiency of the internal and superior rectii muscle; but on palpation, I discovered a small growth of tumor situated in the upper part and nasal side of the orbital cavity behind the ball. I so informed the patient and advised an operation, which was declined. Not being allowed to operate or extirpate the growth by surgical means, I prescribed kali iodide in increasing doses with corrosive sub limate. Several weeks later when the patient presented himself, he also could detect the tumor, though he still objected to

an operation. At this time there existed optic neuritis, and vision, which was XX–200 continued to decrease to complete blindness.

The specific remedies seemed to have no effect, so I put him on arsenic, as advised for malignant growths by Dr. Long,

of Cuthbert, Georgia. This treatment was tried for a time; but the growth continued, like Banquo's ghost to rise. By this time the tumor had bulged from the forehead, and had attained the size of a large apple, perfectly smooth, and to the touch as hard as bone, giving every indication of an ex-ostosis, but with a needle its whole depths could be easily penetrated down to the frontal bone, which disabused our minds of the idea of having a bony tumor to contend with. Shortly after this, from its increase in size, and from constriction of the blood vessels, its natural color or smoothness changed to that of a congested and purplish hue, and convoluted roughness, as you now see it. At this stage I tried electrolysis,

using six to ten cells, but, being quite painful, was not used persistently as it should have been, for I am inclined to think that this somewhat checked its further development.

After a number of weeks, which was about seventeen months ago, I had permission to operate surgically; but at

this stage, on account of its size, and no evidence of its being incapsulated, I was dubious as to what to do, but decided to cut down into the growth and see what could be done. So, with the help of my friends Drs. Hurt, Walker and Blanchard, I etherized the patient, and with knife, divided the tumor the whole length down to the bone; but, as expected, the skin was infiltrated, indeed there was no line of demarkation between the skin and tumor, and thus being deprived of a flap was forced to suspend the operation. The incision was washed with bichloride solution, brought together, and held in apposition

by a number of sutures, and healed by first intention. When I saw him several months afterwards the tumor had somewhat changed, so much so that the constricted conjunctiva, as shown in the cut or photograph, taken just before the operation, had all disappeared; in fact, there now seems to be no undue pressure in the orbital cavity, the place where first discovered; but the eye is covered by the tumor hanging over it from above.

This unfortunate man is still asking for help; hence my appeal to you and this Body. I frankly admit that I am doubtful as to its favorable prognosis, yet when I remember when in London, several years ago, I might on any Thursday visit St. Bartholomew's Hospital, and, perchance, there find such men as Mr. Lawson, Nettleship, Bryant, Erricson, Paget, Lister, Butlin, Heath and other eminent surgeons, with cases similating Charcot's disease, abdominal and intra-orbital tumors, the diagnosis and prognosis of which they could not without a mental reservation, *positively* swear to; so I am not at all embarrassed by my frankness in supplicating you; yes, all of you, though, particularly the experienced surgeons, of the advisability of etherizing the patient and excising the tumor in toto, and with antiseptic dressing, leaving the wound to heal by granulation, or, like Neftel and Semmola, or Naples, plunge a platinum anode perpendicularly into the tumor, down to its presumed point of implantation, with three to five cathodes placed on the periphery of the growth, and destroy it at a single operation, by closing the current, and rapidly carry it to forty or sixty elements, charring the growth, leaving it to slough and heal by granulation. The patient is now, and has been all the time in good health, with no syphilitic history, or cancerous diathesis; and as seeing is believing, I now, gentlemen, present my patient, Mr. John Bennett, for your personal examination and consideration.

# PRESIDENT'S ADDRESS.

## FOOD.

BY R. O. ENGRAM, A. M., M. D., MONTEZUMA, GA.

Food, broadly speaking, may be defined as substances taken into the system for the maintenance of animal life and the healthy nutrition of the animal.

Its application to man will engage our present consideration. The occasion will permit, if I was otherwise equipped for the task upon so great and vital a question, only a few scattered thoughts unsystematically thrown together. I could not hope in so limited time as would be proper for me to occupy the attention of this Association more than to barely enter into a very few of the most prominent thoughts connected therewith. No subject is of so vital import, so little understood, and, I regret to say, so superficially considered, as the selection and preparation of food. I make bold to say that I seriously question if there be one single cook in all the domain of this broad Commonwealth, without the aid of some medical man, who can prepare a meal upon the true basis of the physiological factors concerned in digestion. Physiologically speaking, we American people, though we be great eaters, know literally nothing about eating, and I am greatly pained to say that I am totally unable, even if I could be prodigal with time, to give more than a faint glimmer of light upon so momentous a question. We eat regardless of climate, zones or latitudes, or conditions. We do not calculate the cost or difference whether nature or disease has bequeathed us impaired livers, lungs, kidneys or alimentary canals, unless the system

rebels at our assaults and prods us with the bayonet of disease; and not always then.

We are aware that the inhabitants of cold climates demand a large, even enormous amount of food, and especially the kinds that produce readily a great amount of heat. Therefore the Northmen eat enormously of the oleaginous foods. Conversely the dwellers in the Tropics demand the succulent fruits and vegetables, which contain not more than ten to tweve per cent. of carbon, while the blubber and train oil eat by the inhabitants and travelers of the artics contain from fifty to ninety per cent. of carbon, while we, of the temperate zone, reason would teach, a mixed diet which our appetites demand and nature has been prodigal in supplying to us.

In glancing at this subject the first and most natural inquiry arises as to what are the constituents of food ordinarily used by us; and how can we begin to arrange our dietary in conformity with the physiological factors concerned in digestion, nutrition and elimination, eventuating in a higher type of physical manhood. In considering this subject, we are, per force, to encounter the process of digestion in its relation to the complex organism of our food. Also the culinary preparation of food, along with the habit of man in relation to his diet.

Man is an omniverous animal; therefore his diet is complex. Man is cosmopolitan, scattered over the broad face of the earth; therefore food differs in widely separated localities. Man is an intelligent being; therefore he has personal idiosyncrasies, requiring the exercise of his intelligence in the selection of proper food, that he may maintain his health and bequeath to posterity a healthy progeny.

Digestion is begun in the mouth, continued in the stomach and completed in the alimentary canal. The first act of digestion is mastication, whereby the food is disintegrated and pul-

pified by the grinding action of the teeth. The other several acts of digestion are, the further disintegration of food products by motion, fermentation and emulsification. During and after mastication the amelaceous substances are acted upon by the saliva, which converts them into sugar. The albuminoids of our food are acted upon by the muscular movements of the stomach which further disintegrates the foods, when the pepsin and acids and heat of the stomach further carries on the digestive act. The removal of the starch, in the condition of glucose or soluble sugar, places the muscular fibre, rich in albuminoids, in a condition to be acted upon by the secretions of the stomach. While this process is being enacted in the stomach, the fats are not changed; for neither the saliva nor the secretions of the stomach exercise any perceptible influence upon fatty matters, nor is fatty substances acted upon until they have passed from the domain of the stomach, when intestinal digestion is begun.

Now, this diastatic action of the saliva upon starchy materials can occur only in an alkaline medium; and as soon as the food passes from the mouth into the stomach it encounters the gastric juices, which neutralizes the alkalinity of the saliva and intercepts further salivary digestion, whereupon gastric digestion is set up to which the albuminoids of vegetables, meats and other foods are subjected. It is important to know that the digestive ferment of the stomach can act only in the presence of an acid. It is important to remember this again when the food passes from the stomach through the pyloric ring, into the intestines, the battle ground of digestion is shifted—the same battle, only the position and officers are changed. The same process goes on; only a change of front is effected. Now the acid ferment is lost in the alkaline bile salts, which at once estops its action; as pepsin, the digestive ferment of the stomach, is totally inert—only in the presence of an acid.

And now the pancreatic secretion appears upon the scene. This secretion continues the digestion of the albuminoids, which began in the acid gastric juices, though it needs do so in an alkaline presence. Now the digestion of starch, which had begun by the action of the saliva, is again revived. Fat, which before had not been disturbed by the stomachic digestion, is now emulsionized and taken up by the vili of the intestines. In intestinal digestion the starch, converted into glucose, is taken into the intestinal veins by osmosis. Likewise the albuminoids.

Starchy matters are acted upon by the ptyaline of the saliva in the same manner that vegetable diastase acts in brewing barley. It disrupts the starch granules and transforms the solid starch into soluble material. So with digestion, the insoluble starch is converted into dextrine and soluble grape sugar, which passes from the digestive tube into the circulation. Now this animal disastase, the ptyaline of the saliva, cannot fill its functions as a digestive agent except in the presence of an alkali. So, so soon as the ingesta becomes acid in the stomach the disastatic solution of starch into dextrine and glucose is immediately inhibited, and the remainder of the starch, undigested, falling under the influence of the peptohydrochloric acid of the stomach, remains so until it passes from the domain of acid gastric digestion and falls under the influence of the amylolitic action of the pancreatic secretions.

Albuminoids are not affected by the saliva. The gastric juices contain the ferment that digests the albuminoids; and, indeed, I might add, that the gastric juices act solely and alone on the proteids, converting them into peptones, and in a digestive tendency do not affect other properties of food products; nor, I might add, does it entirely digest the proteids, for they largely pass downward for further digestion in another field of action as peptones.

While I would not underrate gastric digestion, still I am constrained to think that too much importance is attached to the functions of the stomach, or, I might better say that gastric digestion has so occupied our attention that more complex and important acts of digestion have been overlooked, and faulty diagnoses have been made and much misapplied therapeutics have resulted therefrom. When we consider that but one of the complex constituents of the multifarious diet used by us, man being omniverous, is alone acted upon by the stomachic digestive process, and *that* only partially or not wholly digested by the stomach, and the other and numerous constituents of food has to be digested by other acts and organs of digestion, then I may be pardoned for saying that too great importance has been attached to the role that the stomach plays in the process of digestion to the exclusion of others of a more complex and important nature; if one act of digestion can be considered more important than another however small. It is a fact if we are ignorant totally of the composition of food, and but ill informed as to the several processes of digestion, then we are not prepared to conserve our own health or to advise a diet for those who fall to our medical care. But I digress. The proteids when they pass the pyloric ring are further digested by the pancreatic fluids.

When meats are eat the gastric juices attack the gellatinous and proteid fibres that form the areola tissue, by holding in their albuminous envelopes the fat, and dissolve the envelope and set the fat free, upon which the gastric juices have no, or but very slight, action. At times the liberation of fat interferes with gastric digestion, and fatty acids are formed.

So we have arrived at the fact that we have the digestion of

*Starch*—by saliva—in an alkaline medium.

*Albuminoids*—by pepsin—in an acid medium.

*Proteids*—also by trypsin—in an acid medium.

*Fats*—by pancreatin—in an alkaline medium.
*Starch*—in the mouth.
*Albumen*—in the stomach.
*Proteids*—(peptones)—in the intestines.
*Fats*—in the intestines.

By these processes of digestion we are led to infer that there are many factors in digestion taking place under widely different conditions. This fact brings us to consider the complex constituents of food ordinarily used by man. We may divide these into nitrogenous and non-nitrogenous. "The non-nitrogenized alimentary principles are composed of the elements carbon, oxygen and hydrogen variously united together, whilst the non-nitrogenized likewise contain these three elements, but in addition nitrogen, and for the most part sulphur or sulphur and phosphorus as well."

"Liebeg," says Pavy, "regarding the nitrogenizen and non-nitrogenized principles as contributing to quite distinct purposes in the animal economy, referred to them as forming a physiological classification. The former, he looked upon as destined for appropriation towards the growth and maintenance of the components of the body, and therefore he called them 'Plastic Elements of Nutrition.' The latter he regarded as simply designed for undergoing oxidation, and in this way used for serving as a source of heat. These he termed 'Elements of Respiration.'"

NITROGENOUS FOOD.

As nitrogen is a large constituent of the animal economy, it of course requires to be in like ratio supplied to keep the physical animal in life and health, and this must be supplied, not as an elementary, but as an organic compound, as a component of food. Now, the constituent of food that carries the great bulk of nitrogen is albumen. The albuminous foods are derived from both the animal and vegetable kingdom. It

abounds in a larger degree in chickens, birds, animal tissue, milk, eggs, cheese, etc. Albumen may be regarded as the nutrient element in the blood from which the animal tissues are evolved. Vegetable products also contain compounds which, in the language of Liebig, "are not only similar, but identical, with the albumen, fibrin and casein of the animal kingdom." Vegetable albumen exists in wheat, corn, rye, oats, barley and maize as glutein and fibrin. In peas, as legumine, carrots, turnips, cauliflower and cabbage, to a limited extent, possesses a coagulable matter similar to, if not identical with, albuminous principles of animal tissue. Now, these albuminoids have a specific digestion, quite independent of and different from the the non-nitrogenous foods which do not abound in albuminoids.

The non-nitrogenous foods are different alimentary principles from the nitrogenous, and to a great extent serve a different purpose, and require a different digestive process; that is, I mean, as ordinarily used, as an article of alimentation. Nitrogenous matter may be regarded as forming the essential basis of structures possessing active or living properties. The non-nitrogenous principles may be looked upon as supplying the source of power. The one may be spoken of as holding the position of the instrument of action, while the other supplies the motive power. Nitrogenous alimentary matter, may, it is true, by oxidation, contribute to the generation of the moving force; but as has been explained, in fulfilling this office there is evidence before us to show that it is split up into two distinct portions—one containing the nitrogen, which is eliminated as useless, and a residuary non-nitrogenous portion which is retained and utilized in force-production. It is true, also, that non-nitrogenous matter may be applied to tissue formation; but it is probable in doing so, it is for the pur-

pose of being stored up for subsequent appropriation to force-production according as circumstances may require.

NON-NITROGENOUS FOOD.

The non-nitrogenous alimentary principles are the hydrocarbons and the carbohydrates and vegetable acids and alcohol. THE HYDROCARBONS are supplied in fats; and are found in both animal and vegetable foods, and are composed of stearine, palmatine and oleine. Stearine is found alone in animal fats, and is the most solid of fats. Palmatine is the greatest constituent of animal fats, and occurs in vegetable fats, and is not so solid as stearine. Oleine exists, except at very low temperature, in a fluid state. It is found in both animal and vegetable fats.

THE CARBOHYDRATES are another system of non-nitrogenous alimentary principles existing in the group of starches, cane sugar, grape sugar, amyloid substances, gum, dextrine, cellulose, acetic and lactic acid. Starch is the most important because most universally met with, and is found only in the vegetable kingdom; cane and grape sugar are also met with only in the vegetable world. Gum, cellulose and dextrine are encountered in vegetable products or the metamorphosis of vegetable products, and are used in the economy, directly or indirectly, as force-producers.

These non-nitrogenous products have a specific, independent and different digestive ferment from the nitrogenous alimentary principles, as they serve a different purpose in the animal economy. They, save the digestion began in the mouth by the pytaline of the saliva, escape any digestion in the stomach and are digested in the intestines, and only in an alkaline medium.

Now, what is our conclusion?

There are two great acts of digestion—Acid digestion; Alkaline digestion.

There are two great places for digestion—one in the stomach; the other in the intestinal tube.

Stomach digestion is by an acid ferment; intestinal digestion is by an alkaline ferment.

That there are two great groups of food—Nitrogenous food products; non-nitrogenous food products.

Nitrogenous foods are the albuminoids; non-nitrogenous are the hydrocarbons and carbohydrates.

The non-nitrogenous are force-producers; the nitrogenous are tissue producers.

The nitrogenous digest in the stomach by acid ferments; the non-nitrogenous digest in the intestines by alkaline ferment.

Assuming this to be true, where is the practical application? Only study the cases that come into your office. Inquire into the wrecked digestive functions of thousands all over this country, and we can see the practical misapplication, or rather the rash misuse of foods. The American cook-room has about solved the pathogenesis of disease. Men are unwittingly committing gradual suicide for the want of information, or slavery to appetite. The one class gormandizing themselves into starvation, and the other starving themselves into dyspepsia and consumption by eating too much of the wrong kinds of food.

Here is an easy, idle, well-to-do man who needs just enough of albuminous food to keep up tissue nutrition. What is he doing, eating lightly of albuminous nitrogenous substances and sparingly of non-nitrogenous alimentary principles, just sufficient to carry on tissue waste consequent upon to a man of ease and leisure? Not at all. He consumes, luxuriantly, hydrocarbons and carbohydrates. He eats his rich foods, high seasoned sweetmeats, spiced foods, and drinks his wine and champagne; in other words, his avocation or want of avocation does not require the force-producing elements that he

daily consumes. His idle life does not require it, and amid rapid combustion the effete products generated therein are left to clog the system, and as force cannot be destroyed any more than matter, and as this force thus generated must be expended somewhere; and as it is in the system and not required by the system for work, therefore it must expend itself thereupon. This will be indicated for a time by an over-production of fat, increased circulation, exaltation of temperature and general plethora, loss of strength, and flabby muscles, subsequently eventuating in disordered circulation, impaired digestion, gout, renal troubles, and finally death—literally starved his muscular and nervous system, on the one hand, and wrecked his eliminative and secretory system on the other, by gormandizing upon the wrong diet.

Here is a nervous, active man, overrun with business cares, thin-chested, who has not got time to digest anything but the lightest kinds of albuminous foods; dead against a glass of generous wine, because he don't want to get in the habit of stimulating himself. What does he need? Some of Mr. Idleman's luxuriant food, a little fat, a few sweetmeats, a glass of sherry or stout, hydrocarbons and carbohydrates—force-producers, and a little less work, and would gain flesh and strength, and feel all the better for it.

The Arctic explorer, active and cold, is forced, nature furnishing nothing else, to eat the hydrocarbons and carbohydrates in the fat which the seal, narwhal and whale abound; and indeed this is the very diet that he requires. The idle inhabitants of the tropics, where Summer is perpetual and idleness universal, are furnished with succulent vegetables and fruits in abundance, and use them for laziness' sake, greatly to their good. But we Americans eat meat, drink whisky in the cold active Winter, and drink whisky and eat meat in the hot and inactive Summer. Where is the sense in it?

Winter comes and sweeps from the earth fruits and vegetables, and tells us that these things have been stored in ceralia and animals for use in the Winter. Spring comes, and nature buds forth in fruits and flowers. Nature tells us that she is fitting our food for the change that comes; but we heed it not, but plod along with our eyes closed, eating and drinking ourselves to death. Yea, more, entailing our weakness and disease upon posterity.

Do you see that man over there? What did he eat for dinner? A bit of roast, some boiled potatoes, fish, fried eggs, yes, fried, always fried. What time did he dine? At one; it is now three. Where do you suppose that food is now? It is just leaving his stomach, you say, and entering the intestines. What is he doing now, eating? Yes, eating an orange. Oranges are acid; that food has just got into an alkaline medium to be digested, but in he dumps an acid orange to stop the whole process of digestion. What will be the consequences? He will turn up with headache, colic, diarrhœa, or some form of indigestion symptoms; and always wonder what in the world it was that disagreed with him. He will never see that it was the orange that did the mischief, because oranges are healthy and keep off malaria.

Did you ever think of the tons of soda that the people take to keep their food from upsetting their stomachs, and did you ever notice that they invariably take it immediately after eating? I have had scores of people to tell me they always have to take soda after eating, "to keep the grease from rising." Well, it does "keep the grease from rising," but what becomes of the albuminoids? They have to digest in the stomach in an acid ferment, and here has been poured in a lot of alkaline soda to neutralize this acid ferment. Here is another case of colic, diarrhœa or headache and no way to divine the cause.

I want to pause right here to say that all indigestion is not because the stomach is at fault. A person may have the most intractable indigestion and the stomach be as sound as a dollar; and those who are acquainted with the physiological factors in digestion are well aware of this. That the stomach eventually might fall into sympathetic line with other diseased organs, I grant, though in the outset it might have been entirely free of disease or disturbance. The liver, the pancreas or intestinal glands, may be the suffering organ. This is a point that should be borne well in mind in making our diagnosis of indigestions and dyspepsias.

From what I have thus far intimated it occurs that acid and subacid fruits should be taken at or near meals, especially if our meals have consisted largely or wholly of albuminous foods, and soda and other alkalies or alkaline drinks a few hours after meals, when the act of stomachic digestion is about completed. But this is not our practice; when we are replete with our repast we want no fruit. But when stomach digestion is about complete is the time we stop at the fruit stands and nibble nuts, candies, crackers, oranges, and fruits. This we do right in the very teeth of the physiology of digestion. Some doctors prescribe thin acids and their alkalies just like they eat, without any regard to the factors of digestion. When my patients tell me that they have to take soda after eating "to keep the grease from rising," I tell them that their stomachs have served them with notice that they have taken too much grease.

By the way, did you ever study your wife's cook book? Well, you ought. There is some wonderful information to be found in it. Ours "*Teaches you how to prepare food for the well and sick*, and might have stated further that it taught "how to make the well sick and the sick dead." Ours reads—

"ONE THOUSAND RECEIPTS."

Great heavens! Just think—*one thousand receipts*, and all gotten up by "A SKILLED CORPS OF PRACTICAL EXPERTS." Here is a sample dead shot:

"POTATO SALAD: Cut up three quarts of boiled Irish potatoes, add onions, pepper and a cupful of oil and a glass of vinegar," etc., etc.

Starch and oil digest in an alkaline medium; and here is added vinegar, and for fear that it might in some unknown way get digested, this "skilled corps of experts" were careful to guard against such an accident and says a *glassful* of vinegar. But this skilled "corps" failed to say what kind of oil was to be used. Perhaps croton oil was intended. For fear the nefarious compound might over do its work they used croton oil to guard against too great delay. There are many more receipts of this stripe prepared by this "skilled corps of experts," which tells of salads, slaughs, *et id genus omne;* but this suffices.

UNHEALTHY AND UNSOUND MEATS.

It is impossible to speak of the adulteration of food without trespassing too largely upon the time and patience of this Association; but I will refer briefly to some of the unhealthy conditions of meat, for food that is unsound and unwholesome is prone to cause disease in the consumer.

If meat is a pale pink, it is a sign of disease. If a deep purple or reddish purple, it indicates that the animal has not been slaughtered or has suffered from fever. If it is not firm and elastic to the touch, if it moistens the finger much, and the fat looks jelly-like, or has the appearance of wet parchment, it is not good. It should not evolve odor on being chopped and bathed in warm water. It should not shrink in cooking. "Wholesome meats have a marbeled appearance from the ramification of little veins of fat among the muscles."

Meats are occasionally infested with parasites which produce diseases among those who eat of them.

There is one class of meat that is frequently encountered and which is not generally considered particularly unwholesome by the laity, and that is the meat ordinarily known as "measly meat." But it is now known to contain the *Cysticercus Cellulosoe*, a little animal with feet, head and bladder-like tail. These lie imbedded in the flesh, and are about the size of a hemp seed in the pig, and are somewhat smaller in the ox. When these "measly" meats are ate in an underdone state, or if, in cooking, the heat has not reached a temperature high enough to destroy them, they are converted in the human system into tapeworm. Those from the pig produces *tænia solium;* from the ox, *tænia medio canellata.* So we who eat rare steaks and underdone pork had better inspect, for the *cysticercus.* With the ravages of *trichina spiralis* all are familiar, either by experience or education.

PREPARATION OF FOOD.

We pass on now to a brief consideration of the preparation of food. The preparation of food plays an important role in the facility of digestion. Cooking renders foods easy or difficult of digestion according to the mode or manner of the preparation, or renders it inoffensive by destruction of parasites which may infest it. Cooking lessens cohesion, facilitates mastication, and renders solution in the stomach easier. By cooking meats the albumen is coagulated, fibrin solidified, connective tissue and tendons is gellatinized and rendered less tough and tenacious than in the raw state, and muscular fibre falls easily asunder. Fish, birds, or animals, when cooked before *rigor mortis* ensues are tender and more digestible. But as it is almost impossible or impracticable to have cooking done before *rigor mortis* sets in, then meats are tenderer and better flavored to wait until this stage has elapsed. Butchers have

learned this practically. The usual modes of cooking meats are by boiling, roasting, broiling, baking, frying and stewing.

BOILING.—The usual error in boiling meats lies in the fact that meats are too often put into cold or warm water and brought to and maintained at the boiling point until ready to be served, thereby causing a shrinkage of the muscular substance, coagulating the fibrine and albumen to hard and indigestible insipid masses, because the principles of the meat have transfused into the surrounding liquid, leaving the meat a hard, insipid residue. Meat properly boiled should be plunged into boiling water and kept at the boiling point for several minutes; this coagulates the albumen and fibrine externally and retains the flavor and juices of the meat. After boiling from five to ten minutes the temperature should be lowered, and kept considerably below the boiling point, say about 170 degrees Farenheit, until the meat is ready to serve. Thus prepared, the meat is juicy and easily digested. But when cooked at a high (boiling) temperature, the muscular tissue becomes hard and indigestible. If meats are placed in cold water and then brought to the boiling point, the juicy flavor, along with the olein and palmatine, the most digestible of the fats, escape into the surrounding fluids. Boiled meats are less palatable, but lie less heavily upon the stomach.

ROASTING.—The same general principles obtain in roasting that hold good in boiling; but no process of roasting will render meats so digestible as boiling. Under long exposure to the high heat of roasting, some of the fatty principles undergo decomposition into fatty acids, and an acrid product known as acroline, is generated, which are prone to produce derangement of the stomach and pyrosis. These occur less frequently in using boiled meats.

BROILING.—This should be done under the same general

principles. But the high heat and larger surface exposed, broiled meats are rendered comparatively more indigestible.

BAKING.—Baking renders meat more impregnated with the flavors, consequently richer and stronger. As the cooking is carried on in vacuo, the fatty acids are retained and interpenetrate the meats and render them very trying to weak stomachs.

STEWING.—If stewing is carried on with water kept just simmering, it gives us an agreeable and digestible dish.

FRYING.—There has been so many onslaughts upon the frying pan that I could add nothing to the testimony against it. It deserves all of the criticism that has been heaped upon it. Frying is objectionable because heat is applied through the medium of boiling oil, which penetrates the article of food with fatty matter. The high heat melts out the easily digested olein, and coagulates the fibrine and albumen into indigestible masses; leaves the over-hardened sterain in the contracted meshes of the musclar fibrils, generates to a large degree fatty acids, acroline, and a poisonous azotized fatty product which resists digestion, if it does not itself produce acrid irritation by contact. There is no process of cooking, except the undercooking of ceralia, by which starch granules are not disrupted, whereby the human digestive apparatus becomes so overtaxed to perform their lawful functions. If there is one single utensil that should be exiled from the culinary department it is the frying pan. This has been the verdict of physicians from time immemorial. But I venture the assertionnthat it will be the last one to be excommunicated by cooks. In other words, the frying pan has come to stay regardless of the many insidious murders it has committed.

### THE TIME TO EAT.

This address is absorbing too much time of this Association for me to enter into a detailed account of the time to eat;

but I cannot refrain from speaking of some very recent researches by Professor Manassein and Dr. S. L. Rappoport, at St. Petersburg, as to the effect of sleep upon the gastric juices. It was shown that during sleep the digestive functions of the gastric juice are materially affected. These experiments deserve our attention, more particularly as they were made upon the human subject. The quantity of the gastric juice was shown to materially decrease during sleep. The chlorides of sodium and hydrochloric acid were diminished. The digestive power of the gastric juice secreted during sleep was lower than that secreted during waking hours, dependent mainly upon the absence of hydrochloric acid. With regard to other digestive ferments, they were unable to discover any change.

Now here is food for thought. Less power for gastric digestion; less acid physiologically calls for less nitrogenous, that is, less albuminous, food at night. So lay aside your fried ham and eggs, your fried, broiled and smothered chicken, duck and turkey, and albuminous substances for supper, use starchy foods that do not put labor upon the stomach during your sleeping hours, that do not require acid to digest them when the acid runs low and the digestive powers of the gastric secretion is lowered by sleep.

## ALCOHOL.

Much has been said of alcoholic liquors as a food, as a therapeutic remedy, and its injury to the system.

Now, I do not wish to be misunderstood, politically, by those who take extreme positions on both sides of the great liquor question, where one contends that it is evil and only evil, and that continually, while the other can find no great evil in it. But we, as physicans, must face this question calmly and quietly, without fear or prejudice, and only in the

light of science, and only as those who seek for the good of the physical man in health and disease.

We must admit and deplore that this great, good, dangerous and indispensable remedy is potent for good, and alarmingly mighty for evil. Who can better judge this than the physician, you who know it in all of its hideousness, you who see it when judiciously used, coming like a winged angel of mercy to snatch from the grasp of death some sufferer who languishes upon the brink of the grave! We regret with sorrow that it intoxicates. We rejoice that it exhilarates, it stimulates and oxidates. Humanity makes the good physician deeply regret when he sees this remedy abused and tormented into a demon—

> "Puffing the cheek, blearing the curious eye,
> Studding the face with vicious heraldry—
> What pearls and rubies doth the wine disclose,
> Making the purse poorer to enrich the nose."

But listen to the saying of the wise man: "To everything there is a season, and a time to every purpose under the heavens." Change the picture to the bedside where some frail bark lies in the storm-tossed sea of disease. See the magic worked by the judicous use of some form of alcoholic stimulant. Look upon the delirious, raving sufferer who is pursued by damned legions of horrid phantasies, the creation of impoverishment and poison. Administer the draught! The delirium ceases, the patient falls into quiet slumbers. That excruciating picture of horror and suffering that distorted the face is lost in placidness, and gentle smiles wreathes the face of the erstwhile sufferer, as in dreamland he fancies cohorts of white winged angels are chasing back the horrible, blackened angels of the Reaper. All is quiet, the sufferer sleeps painless. The anxious wife, the weeping child, the aged mother, a moment ago black in despair, without hope, no ray of light gleaming

through futurity, not even one rent could they see in the dark pall that hangs around the sufferer. But now he sleeps, the delirium is gone; those demons which pursued him with the relentlessness of a Tasmain Devil, have been put to flight. The aged doctor gravely feels the pulse, and says he's better. You hear the sobs again, scarcely audible, subdued, choked; not those now of utter despair, but those of hope, of joy, mingled with fear, it may be.

Behold this scene. See the members thereof. Do you believe, or can you think that they or either of them here would now turn and say that the stuff is to be damned, and that continually? I believe not.

But let us leave these pictures of fancy and wade out into the realm of fact. Let us inquire whether alcohol is a food, or whether it is a proper therapeutic remedy, or whether, when consumed, if it be possible to do injury to the system.

This leads us to inquire whether alcohol is consumed in the system, or whether it is eliminated as alcohol? It is evident that if alcohol, which is taken into the system, is thrown off by respiration, urination and perspiration as alcohol in toto, then it cannot possibly serve as a food, and can have but little effect save mechanical, consequently irritative effect.

There has been quite an extended discussion of this subject. Liebig contended that it was destroyed by oxidation. Lalleman, Perrin and Duroy insist that it escapes from the body unchanged. Hence there has been some doubt extant as to the true position that alcohol held as a food. When we consider the millions of gallons of various alcoholic liquors that are consumed among the people, as a beverage, and used quite freely amongst the profession therapeutically, it becomes a momentous question to the sick, as well as to the people at large, as to where alcohol should stand both as a food and a therapeutic remedy.

Dr. Edward Smith, making the same experiments as Lalleman, Perrin and Duroy, obtained similar results. Dr. Smith says he has obtained alcohol in the breath for hours after one and a half ounces had been taken. But these experiments do not prove that all of the alcohol is eliminated, as alcohol that is ingested. The later researches of Dr. Parker, Count Wallowicz, DuPre, Anstie, Thudicum, Schulanus, Baudot and others, prove without a reasonable doubt that a large quantity of the alcohol taken is consumed in the system, while much is ejected as alcohol, still a sufficient quantity is used up and not discoverable by examinations of the ejections or the constituents of the body to warrant the assertion that alcohol to a certain extent can be classed as a food.

You will pardon me while I mention some experiments of my own, which have been more confirmatory to me than any others that have come to my notice. In 1882 I became much interested in this subject, and after reading some very able *brouchets* by Miller, Perrin, Duroy, Edward Smith, Anstie, Parker, Count Wallowicz, Schulanus and others, I instituted some experiments upon persons sick with low forms of fever, pneumonia, typhoid fever, etc. Using impervious bags and passing currents of air through the potash-sulphuric-acid test, as done by Smith, Duroy, and others, I found in typhoid fever and pneumonia, where those diseases had reached a very low grade, that large amounts of stimulants were well borne, and that the characteristic odor that usually is exhaled from the breath of those who drink largely of alcoholic stimulants was notably absent in my pneumonic and fever patients. Applying the test to these patients, I found, though pushing alcoholics quite freely that the test for alcohol frequently failed to show the accustomed reaction, or did so feebly, also, that the urine voided did not give decided alcohol reaction on test. I well remember one case of pneumonia whose life was despaired of

by his medical attendant,, who gave no reaction to alcohol, which encouraged me to give stimulants, not to say liberally, but enormously—so liberally, indeed, that misgiving arose in my own mind as to the firm hand with which I had pushed them. But I saw no other course, for to withhold was certain exhaustion, while to push them further, except in the light of my past experience, seemed almost rashness. Between Scylla and Carybdis I followed the indications of past experience, though I seemed to be trotting against time with slim chances to lower the record. Yet I looked science square in the face and took her for my guide, and pushed the stimulants until alcoholic reaction responded to the test. This point reached, the delirium abated, pulse grew less rapid and stronger, and when a full reaction to the test responded my patient was better, and made a slow but good recovery. What had I done. I had stopped tissue waste; I had supplied liquid food to a starving system and at the same time administered the proper therapeutic remedy.

My course now is to test for alcohol; if none shows, I push the stimulant. If my patient does not improve, I have good grounds to believe that it is the proper thing to do. But if a full reaction is apparent, and my patient grows worse in spite of it, then I suspect that it is not the remedy.

With all the lights at my command I am constrained to believe that alcohol is a food, and supplies a place in therapeutics that no known remedy now can. If alcohol is a food, this inquiry arises, what metamorphosis occurs in the system when alcohol is ingested? If food, how can it be injurious?

"Alcohol," says Pavy, "looked at chemically, stands on the other side of the carbohydrates and may be regarded as holding a position intermediate between the carbohydrates and fats. From its composition it is seen to be a less oxyginated body than the carbohydrates and more highly so than the fats."

Alcohol undergoes such metamorphosis as to be converted into heat and force-producing compounds. No one denies that its presence causes a conversion of material into fat, either by catalysis causing other compounds to be transmuted into fat, or by coming in union with other material it itself is transformed into fatty material, upon which the system may be sustained for a longer or shorter period. Aside from its direct stimulant action, it to a great extent, possesses the quality of inhibiting the destruction of other material, and prevents the failure of physical forces peculiarly in some exhaustive conditions. Or, speaking more accurately, by the oxidation of alcohol the fat is spared combustion, and stored up interstitially, for the oxygen, which would have seized upon the fat, combines with alcohol which more readily yields to combustion, and is transformed into heat.

Alcohol in appreciable quantities diminishes cell activity. Since the body heat depends in part on cell activity, anything diminishing their activity will lower the body temperature. According to a well known law of physics the separation of complex chemical bodies into one of simpler compound results in the production of heat. Such change, in all probabilty, takes place in the cell. If alcohol will, therefore, diminish cell activity, it will lower the body temperature. The fact that a diminished quantity of C 02 is excreted does not militate against the idea that alcohol is burned up because there is far less C in alcohol, in proportion to the other constituents, than in fats; moreover, experiments have found an increase of fats and sugar in the blood after inhibition of alcohol, which fact would strengthen the theory that the alcohol was burned. If this be true, then alcohol, under some circumstances, is a proper food that should find a place in our dietetics.

### IS ALCOHOL A THERAPEUTIC AGENCY?

From what has been indicated herein I have somewhat

shadowed my opinion on this point. Some of the physiological action thereof, medicinally used, may be mentioned. Locally applied it coagulates albumen, and abstracts water, hence in relaxed condition of the skin, sweating, and ulcers, it acts as an astringent preventing the loss of lucocytes. Taken into the stomach, it stimulates through the nervous system, exhilrates and exalts the physical condition, causes an increased circulation to the capillary vessels of the stomach, thereby increasing gastric secretion. It quickens the circulation and increases the force of the heart's action ; causes dilation of the superficial capillaries and perhaps those of the brain. The intervascular pressure is increased. The pores of the skin are opened, activity of the sudoriparous glands are heightened, resulting in free perspiration. The liver cells are stimulated, and we have an increased flow of bile. The aqueous secretions from the kidneys are increased. Urea is diminished, and oxidation of the nitrogenous tissue is in a great degree inhibited. It counteracts the poisons of venomous serpents and reptiles, and seems to combat the poisonous materies of low types of fever dependent upon a specific poison. By inhibiting cell activity it decreases the oxidation of tissue and thereby lowers temperature and abates fever. It procrastinates, if not entirely averts, dissolution by estopping combustion of tissue and supplying the material in itself to be consumed instead of the fast yielding surplus that is stored up to sustain life under deprivation and exhaustion. In other words, alcohol, in some low and poisonous forms of disease, yields itself to the ravages of disease and is burnt at the stake for the tissues' sake.

There is no known remedy that can take the place of alcoholic liquors. It has a place in the materia medica that cannot now be supplanted. It is, as a therapeutic agent, as fixed and necessary in its sphere, as chloral, quinia, morphia, chlo-

roform or any other agent, in theirs. Everything has its place, its sphere of action. He is a fawning sycophant, a vacilating lilliput who has not the firm hand and high purpose of humanity to use them when judgment dictates and suffering humanity requires. He is a knave and coward who would yield to their use because fanaticism demands and lucre lures.

### DANGERS OF ALCOHOL.

For the same reason that, judiciously used, it cures ; injudiciously used it kills. No article so largely and universally used is so potent for disastrous result. But how? Alcohol, when brought in contact with the mucous membrane of the stomach, if done so in large and often repeated quantities and for a long continued period, will cause inflammation of the same, will coagulate the albuminoid components of the lining membrane of the stomach, causing thickening and hardening of the coats of the stomach, producing gastric catarrh. Alcohol taken largely interferes with digestion by coagulating the albuminoid substances of the food, rendering them less soluble. Taken after meals, it coagulates the pepsin of the gastric juices and renders it inert and useless as a digestive ferment. Long continued use of alcoholic stimulants produces fatty degeneration, especially of the heart, and an atheromatous condition of the blood vessels. We all know the resultant inco-ordination of muscular movement, and increased mental activity, with confused articulation which follows the two free use of stimulants.

The investigations of Schulissus reveals the fact that alcohol induces a distinct change of the contents of the nerve cells, discoverable by the microscope, the exact nature of which, whether it be a change in the lecithin, fats or albuminoids is not positively known. Long continued use of alcoholic stimulants to intoxication causes an increase of the connective tis-

sue and neuralgia, and atrophy of the nerve cells, paresis, paralysis and death.

Taken abundantly and in a concentrated form, the liver being primarily the recipient of the same, through the blood charged with it in a more or less concentrated form, than other organs further removed from the center of circulation, is the first to suffer. The liver cells being stimulated, enlarge and become infiltrated with fatty deposit, irritation of the connective tissue cells surrounding the venous radicles, proliferation of those cells take place, which eventuates in cirrhosis or hob-nail liver. The venous radicles, eventually, are so narrowed by contraction of connective tissue in which they are enclosed that circulation is impeded; mechanical congestion of the gastric, intestinal and peritoneal capillaries result and ascites ensues. In the kidneys increased blood pressure produces a copious flow of urine, more or less alcohol passes through unchanged, producing a local irritating effect. Long continued over-indulgence stops the metamorphosis of ingested food. The effete matter that is not oxidated, because of the combustion of alcohlic stimulants, is washed through the kidneys, producing congestion of and finally cirrhotic kidney.

I fain would speak of insanity that is handed down "from sire to son," the outcome of the abuse of alcohol. But I have already trespassed too long upon your valuable time in the consideration of this valuable subject. Sufficient to say that statistics are replete with evidence to show that through this instrumentality, insanity is on a great increase and stands a menace to posterity. So we can safely say that alcohol is a food, a medicine and a poison.

### EDUCATION AND COOKING.

Wesleyan and Vassar have their Literary and their Art department, their Music and their other departments. It is well. I am proud of the advancement in the education of woman. She

should be educated, to play and sing and to cultivate the beautiful and refined in art. It is ennobling. The touch and contact of woman thus accomplished will send a thrill of refinement throughout the American people. But what can art and music do in solving the great problem of relieving the great burdens put upon the American stomach by the American cook. What we need is a department in every school and college throughout this land, where women, and men too, can be taught to discriminate as to healthy food and the proper preparation of the same. Our women, especially, should be taught the hygiene of the cook room. For the want of this education our culinary department has got to be a death-trap in the hands of ignorant negro women and indifferent Irish servants who know nor care no more about the hygiene of cooking than a brook trout does about the Catacombs.

If we do not wish to continue a nation of dyspeptics the people must be taught what to eat and how to prepare it.

# CONSTITUTION AND BY-LAWS

OF THE

# MEDICAL ASSOCIATION OF GEORGIA.

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## CONSTITUTION.

(Adopted 1873.)

### ARTICLE I.

NAME.

The name and style of this Association shall be "THE MEDICAL ASSOCIATION OF GEORGIA."

### ARTICLE II.

OBJECTS.

SECTION 1. The object of this Association shall be to organize the medical profession of the State in the most efficient manner possible; to encourage a high standard of professional qualifications and ethics, and to promote professional brotherhood.

### ARTICLE III.

MEMBERS.

SECTION 1. There shall be only one class of members in this Association. Every regularly educated medical man within the limits of this State, who is a graduate of a regular Medical College in good standing, and who adopts and conforms to the Code of Ethics of the American Medical Association, shall be eligible to membership in this body.

## ARTICLE IV.

### OFFICERS.

SECTION 1. The officers of the Medical Association of the State of Georgia shall be as follows: 1st. one President; 2d. two Vice-Presidents; 3d. one Secretary; 4th. one Treasurer; 5th. five Censors.

SEC. 2. The President shall be elected for one year; the Vice-Presidents for one year; the Secretary for five years; the Treasurer for five years—but every officer shall continue in office until his successor is elected and installed in office.

SEC. 3. The Board of Censors shall be elected at the present session by the Association—one for a period of five years, one four years, one for three years, one for two years, one for one year; and annually hereafter the vacancy occurring in the Board of Censors shall be filled by election.

## ARTICLE V.

### PRESIDENT.

SECTION 1. The President shall be the chief executive officer of the Association. He shall preside at all the meetings of the body, preserve order, and give the casting vote when necessary, and perform such other duties as parliamentary usage imposes on presiding officers.

SEC. 2. He shall prepare and deliver, at the opening of each annual session, an address on some subject connected with the interests and objects of this Association.

SEC. 3. He shall appoint annually the requisite number of delegates to the American Medical Association, and to such other scientific bodies as it may be expedient to have this Association represented in.

SEC. 4. He shall appoint an orator, whose duty it shall be to prepare and deliver a public address on some subject con-

nected with medicine, or the medical profession, at the next annual meeting after his appointment.

SEC. 5. He shall in the intervals between the annual sessions, direct and control the general policy and business of the Association, but always with careful attention to the precedents and customary usages of the Association and to its constitutional provisions.

## ARTICLE VI.

### VICE-PRESIDENTS.

SECTION 1. Vice-Presidents, in their order, shall, in case of the absence or the death of the President, discharge all the duties belonging to the Presidential office.

## ARTICLE VII.

### SECRETARY.

SECTION 1. The Secretary shall have charge of all the books, papers and records of the Association, except those belonging to the office of Treasurer.

SEC. 2. He shall record the minutes of the Association at all its meetings.

SEC. 3. He shall conduct the correspondence of the Association under the direction of the President, and shall be chairman of the Publishing Committee.

SEC. 4. He shall keep the roll of the members of this body who have retained their membership by compliance with the provisions of this Constitution, and also the names of those who have forfeited membership, together with the cause of such forfeiture.

SEC. 5. In the absence of the Treasurer he shall collect the usual dues of the members in attendance at the regular sessions.

SEC. 6. The necessary expense incurred by the Secretary, in attending the annual sessions, shall be defrayed out of the funds of the Association.

## ARTICLE VIII.

### TREASURER.

SECTION 1. The Treasurer shall collect the annual dues and have custody of all the moneys belonging to the Association, and shall respond to the calls of the Secretary by order of the President, as far as he may have funds in his possession.

SEC. 2. He shall make annual reports of the financial condition of the Association, and the several amounts received during the year, and from whom; the several amounts due by the Association—if any—to whom, and on what account, the several amounts due to the Association—if any--by whom, and on what account.

SEC. 3. The necessary expense incurred by the Treasurer, in attending the annual sessions, shall be paid out of the funds of the Association.

## ARTICLE IX.

### CENSORS.

SECTION 1. The Board of Censors shall hold annual meetings, concurrently with the annual sessions of the Association, to whom shall be referred all applications for membership, with vouchers from two members, and in such case their decision shall be reported to the body for action. Three of their number shall constitute a quorum, and the chairman and secretary shall be designated by the President.

SEC. 2. They shall take cognizance of all offences against the Association or its Code of Ethics, and shall be authorized to strike from the list of membership all violators of its regulations, and shall report the names of the individuals, and the

offence for which action has been taken, immediately to the Association, at which time, or at the next succeeding meeting, all such individuals may have the right of appeal to that body.

SEC. 3. In the event of a failure of a quorum of the Board of Censors to attend at any annual meeting, it shall be the duty of the President to supply the vacancy by a temporary appointment.

## ARTICLE X.

### FINANCES.

SECTION 1. Every member of the Association shall pay annually into the Treasury such sum as the Association may determine; which amount, it is expected, will be paid during the session of the body.

## ARTICLE XI.

### CONSTITUTION.

SECTION 1. The Constitution shall take immediate effect from its adoption.

SEC. 2. The By-Laws now in operation, and Order of Business, are adopted so far as they agree with the new Constitution.

## ARTICLE XII.

### ANNUAL MEETING.

SECTION 1. The annual meetings shall take place on the third Wednesday in April, and at such place as shall be designated by a majority of the Association.

## ARTICLE XIII.

### AMENDMENTS.

SECTION 1. Any amendment that may be offered to the Constitution shall lie over until the next annual meeting; and for its adoption at such meeting shall require a two-thirds vote of all present and voting.

# BY-LAWS.

(ADOPTED 1875.)

## ORDER OF BUSINESS.

The order of business of this body, unless ordered by a two-thirds vote of the members, shall be as follows:

1. Calling the Association to order by the President, or, in case of his absence, by one of the Vice-Presidents.
2. Report of Committee of Arrangements.
3. President's Address.
4. Reading notes from absentees.
5. Election of members.
6. Reports of Special Committees.
7. Reports of Committee on Publication.
8. Report of Committee on Necrology.
9. Report of Committee on Programme.
10. Voluntary communications. [To be read by title and held subject to call of the Association.
11. Appointments of Nominating Committee by the President. [This committee shall consist of one member from each county represented in the meeting. It shall nominate officers and standing committees. Their report shall be subject to the action of the Association.]
12. Selection of place for next Annual Meeting.
13. Unfinished business.
14. New business.
15. Report of Nominating Committee.
16. Appointing of Orator by the President.

## STANDING COMMITTEES.

The Committee of Arrangements shall consist of five members who reside at the place selected for the ensuing meeting. It shall be their duty to provide suitable accommodations for the meetings of the Association, and to superintend the registration of the members in attendance.

The Committee on Publication shall consist of four members in addition to the Secretary, who is Chairman *ex officio*. They shall provide for the publication of the minutes of the session, together with such papers as are deemed worthy. They shall also append to each volume of Transactions a copy of the Constitution and By-Laws of the Association, Roll of Membership, and Code of Ethics of the American Medical Association.

The Committee on Necrology shall consist of five members, whose duty it shall be to procure memorials of deceased members, and present them for publication in the Transactions.

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## ASSESSMENTS.

Each member shall pay annually to the Association such sums as the Association may determine.

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## OFFICERS—TIME OF ASSUMING THEIR DUTIES.

The Secretary and Treasurer shall enter upon the duties pertaining to their office at the time of their election; the President, Vice-Presidents and Censors, at the commencement of the annual meeting succeeding their election.

# AMENDMENTS.

## I.

### APPLICANTS FOR MEMBERSHIP.

The names of all applicants for membership shall first be presented to the Association in body, and then referred to the Board of Censors. [See, also, Duties of Censors—Constitution, Article IX., Section 1.]

## II.

### INITIATION FEE.

An initiation fee of FIVE DOLLARS shall be required of every new member hereinafter elected to the Association; which fee must accompany the application for membership.

## III.

### ANNUAL ASSESSMENT.

The annual assessment of every member of the Association shall be THREE dollars.

## IV.

### MEMBERS IN ARREARS.

The name of any member who shall fail for two consecutive years to pay the annual assessment shall be dropped from the roll of membership, the Treasurer notifying such member of the state of his account.

## V

### TREASURER'S CALL FOR DUES.

The Treasurer shall, immediately after the meeting of the Association, issue a call for the dues of absent members, by postal card, impressing upon them the need of prompt pay-

ment of the small assessment herein provided, by every member of the Association, and notifying them of the constitutional provision requiring the names of delinquents to be stricken from the roll of membership by the Secretary.

## VI.

### LIFE-MEMBERSHIP.

The assessment for life-membership shall be THIRTY dollars, exempting from annual dues. The sum so received to be invested and the interest used to pay annual dues of said life-member. A member may hold as many life-memberships as he desires, and shall be entitled to one vote for each.

## VII.

### PAPERS AND PUBLICATIONS.

1. No paper shall be read before this Association, by title, or otherwise, until a complete copy of such paper shall have been placed in the hands of the Secretary for publication in the Transactions. This rule shall not prevent the publication of such paper in any Medical Journal, at any time.

2. No article shall be published in the Transactions until it shall have been recommended by the Committee on Publications.

3. Repeals all conflicting laws.

## IX.

### AMENDMENTS.

Any change in these By-Laws can only be made by a vote of two-thirds of all the members present.

The Secretary desires to call attention to the following resolution which was adopted by the Association, in Augusta, in 1886, and, while it was not offered as an amendment to the By-Laws, yet, if carried out, would operate in that way. The resolution is as follows:

"*Resolved*, That the second day of the next and each subsequent Session of this Association be set apart for omnibus discussion.

# CODE OF MEDICAL ETHICS.

## CHAPTER I.

### OF THE DUTIES OF PHYSICIANS TO THEIR PATIENTS, AND OF THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

### ARTICLE I.

#### DUTIES OF PHYSICIANS TO THEIR PATIENTS.

§ 1. A physician should not only be ever ready to obey the calls of the sick, but his mind ought also to be imbued with the greatness of his mission, and the responsibility he habitually incurs in its discharge. Those obligations are the more deep and enduring, because there is no tribunal, other than his own conscience, to adjudge penalties for carelessness or neglect. Physicians should, therefore, minister to the sick with due impressions of the importance of their office, reflecting that the ease, the health, and the lives of those committed to their charge, depend on their skill, attention and fidelity. They should study, also, in their deportment, so to unite *tenderness* with *firmness*, and *condescension* with *authority*, as to inspire the minds of their patience with gratitude, respect and confidence.

§ 2. Every case committed to the charge of a physician should be treated with attention, steadiness and humanity. Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by peculiar circumstances, should be strictly observed, and the familiar and confidential intercourse to which physicians are admitted in their professional visits should be used with discretion, and with the most scrupulous regard to fidel-

ity and honor. The obligation of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance, should ever be divulged by the physician, except when he is imperatively required to do so. The force and necessity of this obligation are indeed so great that professional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice.

§ 3. Frequent visits to the sick are in general requisite, since they enable the physician to arrive at a more perfect knowledge of the disease—to meet promptly every change which may occur, and also tend to preserve the confidence of the patient; but unnecessary visits are to be avoided, as they give useless anxiety to the patient, tend to diminish the authority of the physician, and to render him liable to be suspected of interested motives.

§ 4. A physician should not be forward to make gloomy prognostications, because they savor of empiricism, by magnifying the importance of his services in the treatment or cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger when it really occurs; and even to the patient himself if absolutely necessary. This office, however, is so peculiarly alarming when executed by him, that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy; for the physician should be the minister of hope and comfort to the sick; that, by such cordials to the drooping spirit he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the tranquility of the most resigned in the last moments. The life of a sick person can be shortened, not only by the acts, but also by the words or

the manner of a physiciau. It is, therefore, a sacred duty to guard himself carefully in this respect, and to avoid all things which have a tendency to discourage the patient and depress his spirits.

§ 5. A physician ought not to abandon his patient because the case is deemed incurable, for his attendance may continue to be highly useful to the patient and comforting to the relatives around him, even in the last period of a fatal malady, by alleviating pain and other symptoms, and by soothing mental anguish. To decline attendance under such circumstances would be sacrificing to fanciful delicacy and mistaken liberality that moral duty which is independent of, and far superior to, all pecuniary consideration.

§ 6. Consultations should be promoted in difficult or protracted cases, as they give rise to confidence, energy and more enlarged views in practice.

§ 7. The opportunity which a physician not unfrequently enjoys of promoting and strengthening the good resolutions of his patients, suffering under the consequences of vicious conduct, ought never to be neglected. His counsels, or even remonstrances, will give satisfaction, not offence, if they be proffered with politeness and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

## ARTICLE II.

### OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

§ 1. The members of the medical profession, upon whom is enjoined the performance of so many important and arduous duties towards the community, and who are required to make so many sacrifices of comfort, ease and health for the welfare of those who avail themselves of their services, certainly have a right to expect and require that their patients should enter-

tain a just sense of the duties which they owe to their medical attendants.

§ 2. The first duty of a patient is to select as his medical adviser one who has received a regular professional education. In no trade or occupation does mankind rely on the skill of an untaught artist; and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

§ 3. Patients should prefer a physician whose habits of life are regular, and who is not devoted to company, pleasure, or any pursuit incompatible with his professional obligations. A patient should also confide the care of himself and family, as much as possible, to one physician; for a medical man who has become acquainted with the peculiarities of constitution, habits and predispositions of those he attends, is more likely to be successful in his treatment than one who does not possess that knowledge.

A patient who has thus selected his physician should always apply for advice in what may appear to him trivial cases, for the most fatal results often supervene on the slightest accidents. It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

§ 4. Patients should faithfully and unreservedly communicate to their physicians the supposed cause of their disease. This is the more important, as many diseases of mental origin stimulate those depending on external causes, and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser. He should always bear in mind that a medical man is under the strongest obligations of secrecy. Even the female sex should never allow feelings of shame or delicacy to

prevent their disclosing the seat, symptoms and causes of complaints peculiar to them. However commendable a modest reserve may be in the common occurrences of life, its strict observance in medicine is often attended with the most serious consequences, and a patient may sink under a painful and loathsome disease, which might have been readily prevented had timely intimation been given to the physician.

§ 5. A patient should never weary his physician with a tedious detail of events or matters not appertaining to his disease. Even as relates to his actual symptoms, he will convey much more real information by giving clear answers to interrogatories than by the most minute account of his own framing. Neither should he obtrude upon his physician the details of his business, nor the history of his family concerns.

§ 6. The obedience of a patient to the prescriptions of his physician should be prompt and implicit. He should never permit his own crude opinions as to their fitness to influence his attention to them. A failure in one particular my render an otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drink and exercise. As patients become convalescent they are very apt to suppose that the rules prescribed for them may be disregarded; and the consequencc, but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever that may be recommended to them by the self-constituted doctors and doctresses who are so frequently met with, and who pretend to possess infallible remedies for the cure of every disease. However simple some of their prescriptions may appear to be, it often happens that they are productive of much mischief, and in all cases they are injurious, by contravening the plan of treatment adopted by the physician.

§ 7. A patient should, if possible, avoid even the *friendly visits of a physician* who is not attending him—and when he

does receive them, he should never converse on the subject of his disease, as an observation may be made, without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert, for, although their modes of treatment may be attended with equal success when employed singly, yet conjointly, they are very likely to be productive of disastrous results.

§ 8. When a patient wishes to dismiss his physician, justice and common courtesy require that he should declare his reasons for so doing.

§ 9. Patients should always, when practicable, send for their physician in the morning, before his usual hour of going out; for, by being early aware of the visits he has to pay during the day, the physician is able to apportion his time in such a manner as to prevent an interference of engagements. Patients should also avoid calling on their medical advisers. unnecessarily during the hours devoted to meals or sleep. They should always be in readiness to receive the visits of their physician, as the detention of a few minutes is often of serious inconvenience to him.

§ 10. A patient should, after his recovery, entertain a just and enduring sense of the value of the services rendered him by his physician; for these are of such a character that no mere pecuniary acknowledgment can repay or cancel them.

## CHAPTER II.

### OF THE DUTIES OF PHYSICIANS TO EACH OTHER, AND TO THE PROFESSION AT LARGE.

### ARTICLE I.

#### DUTIES FOR THE SUPPORT OF PROFESSIONAL CHARACTER.

§ 1. Every individual, on entering the profession, as he becomes thereby entitled to all its privileges and immunities, incurs an obligation to exert his best abilities to maintain its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness. He should, therefore, observe strictly such laws as are instituted for the government of its members; should avoid all contumelious or sarcastic remarks relative to the faculty as a body; and while, by unwearied diligence, he resorts to every honorable means of enriching the science, he should entertain a due respect for his seniors, who have, by their labors, brought it to the elevated condition in which he finds it.

§ 2. There is no profession, from the members of which greater purity of character, and a higher standard of moral excellence are required, than the medical; and to attain such eminence is a duty every physician owes alike to his profession and to his patients. It is due to the latter, as without it he cannot command their respect and confidence; and to both, because no scientific attainments can compensate for the want of correct moral principles. It is also incumbent upon the faculty to be temperate in all things, for the practice of physic requires the unremitting exercise of a clear and vigorous understanding; and on emergencies, for which no professional man should be unprepared, a steady hand, an acute eye, and an unclouded head, may be essential to the well-being and even to the life of a fellow-creature.

§ 3. It is derogatory to the dignity of the profession to resort to public advertisements or private cards, or hand-bills, inviting the attention of individuals affected with particular diseases—publicly offering advice and medicine to the poor, gratis, or promising radical cures; or to publish cases or operations in the daily prints, or suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

§ 4. Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine; or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or of others. For if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and if mystery alone gave it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them.

## ARTICLE II.

### PROFESSIONAL SERVICES OF PHYSICIANS TO EACH OTHER.

§ 1. All practitioners of medicine, their wives and their children while under the paternal care, are entitled to the gratuitous services of any one or more of the faculty residing near them, whose assistance may be desired. A physician afflicted with disease is usually an incompetent judge of his own case; and the natural anxiety and solicitude which he experiences at the sickness of a wife, a child, or any one, who by the ties of consanguinity, is rendered peculiarly dear to

him, tend to obscure his judgment, and produce timidity and irresolution in his practice. Under such circumstances, medical men are peculiarly dependent upon each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. Visits ought not, however, to be obtruded officiously; as such unasked civility may give rise to embarrassment, or interfere with that choice on which confidence depends. But, if a distant member of the faculty, whose circumstances are affluent, requests attendance, and an honorarium be offered, it should not be declined; for no pecuniary obligation ought to be imposed which the party receiving it would not wish to incur.

## ARTICLE III.

### OF THE DUTIES OF PHYSICIANS AS RESPECTS VICARIOUS OFFICES.

§ 1. The affairs of life, the pursuit of health, and the various accidents and contingencies to which a medical man is peculiarly exposed, sometimes require him temporarily to withdraw from his duties to his patients and to request some of his professional brethren to officiate for him. Compliance with this request is an act of courtesy which should always be performed with the utmost consideration for the interest and character of the family physician, and when exercised for a short period, all the pecuniary obligations for such service should be awarded to him. But if a member of the profession neglects his business in quest of pleasure and amusement, he cannot be considered as entitled to the advantages of the frequent and long-continued exercise of this fraternal courtesy without awarding to the physician who officiates the fees arising from the discharge of his professional duties.

In obstetrical and important surgical cases, which give rise to unusual fatigue, anxiety and responsibility, it is just that

the fees accruing therefrom should be awarded to the physician who officiates.

## ARTICLE IV.

### OF THE DUTIES OF PHYSICIANS IN REGARD TO CONSULTATIONS.

§ 1. A regular medical education furnishes the only presumptive evidence of professional abilities and acquirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations the good of the patient is the sole object in view, and this is often dependent on personal confidence, no intelligent regular practitioner, who has a license to practice from some Medical Board of known and acknowledged respectability, recognized by the American Medical Association, and who is in good moral and professional standing in the place in which he resides, should be fastidiously excluded from fellowship, or his aid refused in consultation, when it is requested by the patient. But no one can be considered as a regular practitioner or a fit associate in consultation whose practice is based on an exclusive dogma to the rejection of the accumulated experience of the profession and of the aids actually furnished by anatomy, physiology, pathology and organic chemistry.

§ 2. In consultations no rivalship or jealousy should be indulged. Candor, probity and all due respect should be exercised toward the physician having charge of the case.

§ 3. In consultations, the attending physician should be the first to propose the necessary questions to the sick; after which the consulting physician should have the opportunity to make such further inquiries of the patient as may be necessary to satisfy him of the true character of the case. Both physicians should then retire to a private place for delibera-

tion, and the one first in attendance should communicate the directions agreed upon to the patient or his friends, as well as any opinions which it may be thought proper to express, but no statement or discussion of it should take place before the patient or his friends, except in the presence of all the faculty attending, and by their common consent; and no *opinions* or *prognostications* should be delivered which are not the result of previous deliberation and concurrence.

§ 4. In consultations, the physician in attendance should deliver his opinions first; and when there are several consulting, they should deliver their opinions in the order in which they have been called in. No decision, however, should restrain the attending physician from making such variations in the mode of treatment as any subsequent unexpected change in the character of the case may demand. But such variation and the reason for it ought to be carefully detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician if he is sent for in an emergency, when the regular attendant is out of the way, and similar explanations must be made by him at the next consultation.

§ 5. The utmost punctuality should be observed in the visits of physicians when they are to hold consultation together; and this is generally practicable, for society has been considerate enough to allow the plea of a professional engagement to take precedence of all others, and to be an ample reason for the relinquishment of any present occupation; but, as professional engagements may sometimes interfere and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period, after which the consultation should be considered as postponed to a new appointment. If it be the attending physician who is present, he will, of course, see the patient and prescribe, but if it be the

consulting one, he should retire, except in case of emergency, or when he has been called from a considerable distance, in which latter case he may examine the patient and give his opinion in *writing* and *under seal*, to be delivered to his associate.

§ 6. In consultations, theoretical discussions should be avoided, as occasioning perplexity and loss of time, for there may be much diversity of opinion concerning speculative points, with perfect agreement in those modes of practice which are founded, not on hypothesis, but on experience and observation.

§ 7. All discussions in consultation should be held as secret and confidential. Neither by words nor manner should any of the parties to a consultation assert or insinuate that any part of the treatment pursued did not receive his assent. The responsibility must be equally divided between the medical attendants. They must equally share the credit of success as well as the blame of failure.

§ 8. Should an irreconcilable diversity of opinion occur when several physicians are called upon to consult together, the opinion of the majority should be considered as decisive; but if the numbers be equal on each side, then the decision should rest with the attending physician. It may, moreover, sometimes happen that two physicians cannot agree in their views of the nature of a case and the treatment to be pursued. This is a circumstance much to be deplored, and should always be avoided, if possible, by mutual concessions, as far as they can be justified by a conscientious regard for the dictates of judgment; but in the event of its occurrence, a third physician should, if practicable, be called to act as umpire; and if circumstances prevent the adoption of this course, it must be left to the patient to select the physician in whom he is most willing to confide; but as every physician

relies upon the rectitude of his judgment, he should, when left in the minority, politely and consistently retire from any further deliberation in the consultation, or participation in the management of the case.

§ 9. As circumstances sometimes occur to render a *special consultation* desirable, when the continued attendance of physicians might be objectionable to the patient, the member of the faculty whose assistance is required in such cases should sedulously guard against all future unsolicited attendance. As such consultations require an extraordinary portion both of time and attention, at least a double honorarium may be reasonably expected.

§ 10. A physician who is called upon to consult, should observe the most honorable and scrupulous regard for the character and standing of the practitioner in attendance; the practice of the latter, if necessary, should be justified, as far as it can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in him or affect his reputation. The consulting physician should also carefully refrain from any of those extraordinary attentions or assiduities which are too often practiced by the dishonest for the base purpose of gaining applause, or ingratiating themselves into the favor of families and individuals.

## ARTICLE V.

### DUTIES OF PHYSICIANS IN CASES OF INTERFERENCE.

§ 1. Medicine is a liberal profession, and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications—not upon intrigue or artifice.

§ 2. A physician, in his intercourse with a patient under the care of another practitioner, should observe the strictest

caution and reserve. No meddling inquiries should be made—no disingenuous hints given relative to the nature and treatment of his disorder; nor any course of conduct pursued that may directly or indirectly tend to diminish the trust reposed in the physician employed.

§ 3. The same circumspection and reserve should be observed when, from motives of business or friendship, a physician is prompted to visit an individual who is under the direction of another practitioner. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no particular inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

§ 4. A physician ought not to take charge of, or prescribe for, a patient who has recently been under the care of another member of the faculty in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or been regularly notified that his services are no longer desired. Under such circumstances no unjust or illiberal insinuations should be thrown out in relation to the conduct or practice previously pursued, which should be justified as far as candor and regard for truth and probity will permit; for it often happens that patients become dissatisfied when they do not experience immediate relief, and, as many diseases are naturally protracted, the want of success, in the first state of treatment, affords no evidence of a lack of professional knowledge and skill.

§ 5. When a physician is called to an urgent case, because the family attendant is not at hand, he ought, unless his assistance in consultation be desired, to resign the care of the patient to the latter immediately on his arrival.

§ 6. It often happens, in cases of sudden illness or of recent accidents and injuries, owing to the alarm and anxiety of friends, that a number of physicians are simultaneously sent for. Under these circumstances, courtesy should assign the patient to the first who arrives, who should select from those present any additional assistance that he may deem necessary. In all such cases, however, the practitioner who officiates should request the family physician, if there be one, to be called, and, unless his further attendance be requested, should resign the case to the latter on his arrival.

§ 7. When a physician is called to the patient of another practitioner, in consequence of the sickness or absence of the latter, he ought, on the return or recovery of the regular attendant, and with the consent of the patient, to surrender the case.

[The expression, "patient of another practitioner," is understood to mean a patient who may have been under the charge of another practitioner at the time of the attack of sickness, or departure from home of the latter, or who may have called for his attendance during his absence or sickness, or in any manner given it to be understood that he regarded the said physician as his regular medical attendant.]

§ 8. A physician, when visiting a sick person in the country, may be desired to see a neighboring patient who is under the regular direction of another physician, in consequence of some sudden change or aggravation of symptoms. The conduct to be pursued on such an occasion, is to give advice adapted to present circumstances; to interfere no further than is absolutely necessary with the general plan of treatment; to assume no future direction, unless it be expressly desired; and, in this last case, to request an immediate consultation with the practitioner previously employed.

§ 9. A wealthy physician should not give advice *gratis* to

the affluent; because his doing so is an injury to his professional brethren. The office of a physician can never be supported as an exclusively beneficent one; and it is defrauding, in some degree, the common funds for its support, when fees are dispensed with which might justly be claimed.

§ 10. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished during the attendance of the latter, he is entitled to the fee, but should resign the patient to the practitioner first engaged.

## ARTICLE VI.

### OF DIFFERENCES BETWEEN PHYSICIANS.

§ 1. Diversity of opinion and opposition of interest may, in the medical, as in other professions, sometimes occasion controversy and even contention. Whenever such cases unfortunately occur, and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians, or a *court-medical.*

§ 2. As peculiar reserve must be maintained by physicians towards the public, in regard to professional matters, and as there exist numerous points in medical ethics and etiquette through which the feelings of medical men may be painfully assailed in their intercourse with each other, and which cannot be understood or appreciated by general society, neither the subject matter of such differences, nor the adjudication of arbitrators should be made public, as publicity, in a case of this nature, may be personally injurious to the individuals concerned, and can hardly fail to bring discredit on the faculty.

## ARTICLE VII.

### OF PECUNIARY ACKNOWLEDGMENTS.

§ 1. Some general rule should be adopted by the faculty in

every town or district, relative to *pecuniary acknowledgments* from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

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## CHAPTER III.

### OF THE DUTIES OF THE PROFESSION TO THE PUBLIC, AND OF THE OBLIGATIONS OF THE PUBLIC TO THE PROFESSION.

### ARTICLE I.

#### DUTIES OF THE PROFESSION TO THE PUBLIC.

§ 1. As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygiene, and legal medicine. It is their province to enlighten the public in regard to quarantine regulations, the location, arrangement, and dietaries of hospitals, asylums, schools, prisons, and similar institutions—in relation to the medical police of towns, as drainage, ventilation, etc., and in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives.

§ 2. Medical men should also be always ready, when called on by the legally constituted authorities, to enlighten coroner'si nquests and courts of justice, on subjects strictly medical, such as involve questions relating to sanity, legitimacy, murder by poisons, or other violent means, and in regard to

the various other subjects embraced in the science of Medical Jurisprudence. But in these cases, and especially where they are required to make a *post mortem* examination, it is just, in consequence of the time, labor and skill required, and the responsibility and risk they incur, that the public should award them a proper honorarium.

§ 3. There is no profession by the members of which eleemosynary services are more liberally dispensed than the medical, but justice requires that some limit should be placed to the performance of such good offices. Poverty, professional brotherhood, and certain of the public duties referred to in the first section of this article, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public, or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, to perform militia duty, or to testify to the state of health of persons wishing to insure their lives, obtain pensions, or the like, without a pecuniary acknowledgment. But to individuals in indigent circumstances, such professional services should always be cheerfully and freely accorded.

§ 4. It is the duty of physicians who are frequent witnesses of the enormities committed by quackery, and the injury to health, and even destruction of life, caused by the use of quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretensions of artful empyrics and imposters. Physicians ought to use all the influence which they may possess, as professors in Colleges of Pharmacy, and by exercising their option in regard to the shops to which their prescriptions

shall be sent, to discourage druggists and apothecaries from vending quack or secret medicines, or from being in any way engaged in their manufacture and sale.

## ARTICLE II.

### OBLIGATIONS OF THE PUBLIC TO PHYSICIANS.

§ 1. The benefits accruing to the public, directly or indirectly, from the active and unwearied beneficence of the profession, are so numerous and important that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualifications; to make a proper discrimination between true science and the assumption of ignorance and empyricism; to afford every encouragement and facility for the acquisition of medical education, and no longer to allow the statute-books to exhibit the anomaly of exacting knowledge from physicians, under a liability to heavy penalties, and of making them obnoxious to punishment for resorting to the only means of obtaining it.

*Resolved*, That this Association recognizes Specialties as proper and legitimate fields of practice.

*Resolved*, That Specialties shall be governed by the same rules of professional etiquette as have been laid down for general practitioners.

*Resolved*, That it shall not be proper for the Specialists publicly to advertise themselves as such, or assume any title not specially granted by a regularly chartered college.

# ROLL OF MEMBERS.

# ROLL OF MEMBERS

OF THE

# MEDICAL ASSOCIATION OF GEORGIA.

## 1890.

### ARRANGED ALPHABETICALLY.

ABBREVIATIONS.—P., President; V-P., Vice-President; S., Secretary; C. S. Corresponding Secretary; T., Treasurer; O., Orator; C., Censor—indicating the offices the members hold or have held.

Members are particularly requested to notify the Secretary promptly on making any changes in their post-offices.

The Secretary will esteem it a favor if any member will write him at once on noticing any inaccuracy or omission in the roll.

| NAME. | POST OFFICE. | COUNTY. | ADMITTED. |
|---|---|---|---|
| Alexander, L. B. (V-P.) | Atlanta | Fulton | 1849 |
| Allen, J. E. | Augusta | Richmond | 1880 |
| Alston, N. C. | Richland | Stewart | 1888 |
| Anderson, J. F. | Cornucopia | Jones | 1887 |
| Anthony, E. R. (V-P.) | Griffin | Spalding | 1887 |
| Armstrong, W. S. | Atlanta | Fulton | 1866 |
| Atkinson, B. | Tarboro | Camden | 1890 |
| Avery, Arch. | Atlanta | Fulton | 1887 |
| Avery, J. C. | Atlanta | Fulton | 1889 |
| Bacon, W. W. | Albany | Dougherty | 1890 |
| Bailey, J. W. | Gainesville | Hall | 1861 |
| Baird, James B. (S., O.) | Atlanta | Fulton | 1872 |
| Baker, A. H. | Augusta | Richmond | 1876 |
| Baldwin, M. A. | Cuthbert | Randolph | 1890 |
| Bardwell, E. L. | Talbotton | Talbot | 1872 |
| Barnett, J. W. | Raytown | Taliaferro | 1880 |

| NAME. | POST OFFICE. | COUNTY. | ADMITTED. |
|---|---|---|---|
| Barron, R. B. | Clinton | Jones | 1884 |
| Battey, H. H. | Rome | Floyd | 1882 |
| Battey, Robert (C., P.) | Rome | Floyd | 1859 |
| Battey, W. W. | Augusta | Richmond | 1876 |
| Baskin, R. H. | Byron | Houston | 1889 |
| Baxley, W. H | Hephzibah | Richmond | 1886 |
| Beasley, James A. | West Point | Troup | 1884 |
| Beazley, J. S. | Stilesboro | Bartow | 1887 |
| Bell, A. K. | Madison | Morgan | 1889 |
| Bell, A. A. | Madison | Morgan | 1858 |
| Belt, L. J. | Holcombe | Wilkinson | 1888 |
| Benedict, Samuel C. | Athens | Clarke | 1883 |
| Bennett, J. S. | Atlanta | Fulton | 1887 |
| Benson, C. F. | Atlanta | Fulton | 1887 |
| Bishop, J. N. | Brunswick | Glynn | 1890 |
| Blain, Arthur C. | Brunswick | Glynn | 1890 |
| Bleakney, W. | Pooler | Chatham | 1888 |
| Bloomfield, James C. | Athens | Clarke | 1890 |
| Botsford, L. B. | Brunswick | Glynn | 1890 |
| Boyd, Montague L. | Savannah | Chatham | 1889 |
| Branham, Harris M. | Brunswick | Glynn | 1890 |
| Brantley, S. D. | Sandersville | Washington | 1849 |
| Bridges, T. J., | Cabaniss | Monroe | 1890 |
| Brooks, C. A. | Americus | Sumter | 1888 |
| Brown, S. E. | Eatonton | Putnam | 1890 |
| Brown, R. E., | Coleman | Randolph | 1889 |
| Bruce, W. W. | Thomasville | Thomas | 1881 |
| Bryans, R. G. | Jackson | Henry | 1890 |
| Bullard, W. L. | Columbus | Muscogee | 1882 |
| Burdett, J. R. | Tennille | Washington | 1889 |
| Burford, R. E. L. | Brunswick | Glynn | 1890 |
| Burford, H. | Brunswick | Glynn | 1888 |
| Butts, J. A. | Brunswick | Glynn | 1888 |
| Calhoun, A. W. (V-P., C., P.) | Atlanta | Fulton | 1874 |
| Calhoun, F. R. (V-P.) | Euharlee | Bartow | 1873 |
| Callaway, J. A. | Milledgeville | Baldwin | 1882 |

| NAME. | POST OFFICE. | COUNTY. | ADMITTED. |
|---|---|---|---|
| Campbell, H. F. (o., v-p., p.) | ...Augusta ... ... | ...Richmond | ... 1851 |
| Carter, C. J.... ... ... ... | ...Long Pond .... | ...Lowndes... | ... 1889 |
| Chappell, Roy J... .... .... | ...Dublin ... ... | ...Laurens ... | ... 1890 |
| Charlton, T. J. ... ... ... | ...Savannah... ... | ...Chatham... | ... 1887 |
| Cheatham, W. B. .... .. | ...Dawson ... ... | ...Terrell .... | .... 1880 |
| Cheney, R. L. ... .... ... | ...Shellman .... ... | ....Randolph | ... 1889 |
| Clark, P. S.... ... ... ... | .. Darien ... ... | ...McIntosh | ... 1890 |
| Clarke, George L. ... ... | ...Shellman .... .... | ...Randolph | ... 1889 |
| Clements, J. W. ... ... ... | ...Subligna .... .... | ...Chattooga | .... 1877 |
| Colding, C. H. ... ... .... | ...Savannah... ... | ...Chatham... | ... 1882 |
| Cole, J. F. ... ... .... ... | ...Carrollton... ... | ...Carroll ... | ... 1884 |
| Collier, T. E.... ... ... ... | ...Atlanta ... ... | .. Fulton ... | ... 1887 |
| Comas, P. H... .... ... ... | ...Baxley ... ... | ...Appling ... | .... 1889 |
| Connally, E. L. (c.) ... ... | ...Atlanta ... ... | ...Fulton ... | .... 1860 |
| Cooper, Hunter P. ... ... | ...Atlanta ... .... | ....Fulton ... | ... 1886 |
| Cortelyou, P. R. (v-p.) ... | ....Marietta ... ... | ...Cobb.... .... | ... 1887 |
| Cotter, R. O... .... ... ... | ...Macon ... ... | ...Bibb ... ... | ... 1882 |
| Crawford, J. M. ... ... ... | ...Atlanta ... ... | ...Fulton ... | .... 1888 |
| Crichton, L. M. ... ... ... | ...Atlanta ... ... | ...Fulton ... | ... 1888 |
| Crozier, J. H. ... ... ... | ...Cedar Springs... | ...Early ... | ... 1889 |
| Conyers, H. D. ... ... ... | ...Bartow ... ... | ...Jefferson... | ... 1888 |
| Curry, M. L... ... ... ... | ...Brunswick ... | ...Glynn ... | ... 1890 |
| Davidson, A. C. ... ... ... | ...Sharon ... .... | ...Taliaferro.. | ... 1887 |
| Davis, J. P. ... ... .... ... | ...Tennille ... ... | ...Washington | ... 1886 |
| Deadwiler, M. P. (v-p.) ... | ...Elberton ... .... | ...Elbert ... | ... 1868 |
| Dean, J. G. ... ... ... ... | ...Dawson ... ... | ...Terrell ... | ... 1889 |
| Dekle, Thomas S... ... .... | ...Thomasville ... | ...Thomas ... | ... 1874 |
| Derry, H. P.... ... .... .... | ...Macon ... ... | ...Bibb... ... | ... 1889 |
| Divine, K. C ... ... ... | ...Atlanta ... ... | ...Fulton ... | ... 1882 |
| Dobbins, W. O. .... ... ... | ...Fort Gaines ... | ...Clay... ... | ... 1888 |
| Doster, B. R. (v-p., c.) ... | ...Blakely ... ... | ...Early ... | ... 1873 |
| Doughty, W. H. (c.) .... ... | ...Augusta ... ... | ....Richmond | ... 1857 |
| Doughty, Jr., W. H.... ... | ....Augusta ... ... | ...Richmond | ... 1880 |
| Douglas, J. E. ... ... ... | ...Damascus.... ... | ...Early .. | ... 1889 |
| Drewry, T. E. .... ... ... | ...Griffin ... .... | ...Spalding... | ... 1888 |

| NAME. | POST OFFICE. | COUNTY. | ADMITTED. |
|---|---|---|---|
| Dudley, M. J. | Sonoraville | Gordon | 1888 |
| Dugas, George C. | Augusta | Richmond | 1880 |
| Duggan, J. H. | Stevensville | Wilkinson | 1884 |
| Duncan, J. W. | Atlanta | Fulton | 1883 |
| Duncan, William | Savannah | Chatham | 1868 |
| Danwody, J. A. (V-P.) | Brunswick | Glynn | 1888 |
| Earnest, J. G. | Atlanta | Fulton | 1882 |
| Elkin, W. S. | Atlanta | Fulton | 1882 |
| Elliott, W. H. | Savannah | Chatham | 1884 |
| England, W. G. | Cedartown | Polk | 1886 |
| Engram, R. O. (V-P.) | Montezuma | Macon | 1881 |
| Evans, W. W. | Oxford | Newton | 1872 |
| Faver, Paul | Fayetteville | Fayette | 1873 |
| Ferguson, E. G. | Macon | Bibb | 1882 |
| Field, J. C. | Oglethorpe | Macon | 1889 |
| Flanders, J. W. | Wrightsville | Johnson | 1884 |
| Folks, Gustavus P. | Waycross | Ware | 1890 |
| Ford, DeSaussure (V-P., P.) | Augusta | Richmond | 1857 |
| Fortson, T. S. | Washington | Wilkes | 1886 |
| Foster, Eugene (V-P., C., P.) | Augusta | Richmond | 1875 |
| Gann, Dewell | Bolton | Fulton | 1887 |
| Garland, J. T. | Hillsboro | Jasper | 1889 |
| Gaston, J. McF. | Atlanta | Fulton | 1884 |
| Gay, D. E. | Sidney | Emanuel | 1875 |
| Gerdine, John (C., V-P.) | Athens | Clarke | 1882 |
| Goodrich, E. C. (T.) | Augusta | Richmond | 1876 |
| Goss, I. H. | Athens | Clarke | 1877 |
| Green, C. C. | Atlanta | Fulton | 1887 |
| Green, J. E. | Augusta | Richmond | 1886 |
| Greene, J. H. | Decatur | DeKalb | 1887 |
| Greene, J G. | Cartersville | Bartow | 1879 |
| Griffin, C. F. | Cassville | Bartow | 1888 |
| Griggs, A. W. (O., V-P., C., P.) | West Point | Troup | 1866 |
| Griggs, J. W. | West Point | Troup | 1878 |
| Grimes, George J. | Columbus | Muscogee | 1872 |
| Hall, Charles H. (C.) | Macon | Bibb | 1870 |

| NAME. | POST OFFICE. | COUNTY. | ADMITTED. |
|---|---|---|---|
| Hamilton, J. L. | Stone Mountain | DeKalb | 1859 |
| Hardman, L. G. | Harmony Grove | Jackson | 1877 |
| Hardon, Virgil O. | Atlanta | Fulton | 1886 |
| Harris, R. B. | Savannah | Chatham | 1885 |
| Harris, N. O. | Atlanta | Fulton | 1887 |
| Harris, I. L. | Milledgeville | Baldwin | 1885 |
| Harrison, Jr. W. H. | Augusta | Richmond | 1886 |
| Hart, C. C. | Cross Keys | DeKalk | 1888 |
| Hatch, M. G. (C.) | Tennille | Washington | 1883 |
| Hawkins, S. B. (V-P., C.) | Americus | Sumter | 1871 |
| Head, J. M. | Zebulon | Pike | 1883 |
| Heard, J. H. | Walden | Bibb | 1884 |
| Henderson, J. R. | Sun Hill | Washington | 1884 |
| Herrman, J. D. | Eastman | Dodge | 1884 |
| Hickman, C. W. | Augusta | Richmond | 1880 |
| Hicks, C. | Dublin | Laurens | 1884 |
| Hill, J. J. | Washington | Wilkes | 1880 |
| Hilsman, P. L. | Albany | Dougherty | 1871 |
| Hinkle, J. B. | Americus | Sumter | 1889 |
| Hitt, V. G. | Augusta | Richmond | 1870 |
| Hobbs, A. G. | Atlanta | Fulton | 1882 |
| Holliday, W. Z | Harlem | Columbia | 1884 |
| Holmes, G. W. (V-P., P., C.) | Rome | Floyd | 1867 |
| Holmes, J. B. S. (V-P., P.) | Rome | Floyd | 1872 |
| Holmes, T. M. (O.) | Rome | Floyd | 1883 |
| Holt, W. F. (V-P., P.) | Macon | Bibb | 1867 |
| Hopkins, T. S. | Thomasville | Thomas | 1865 |
| Hopkins, J. G. | Thomasville | Thomas | 1890 |
| Houstoun, J. P. S. | Savannah | Chatham | 1873 |
| Howell, D. H. | Atlanta | Fulton | 1878 |
| Hoyt, W. D. | Rome | Floyd | 1871 |
| Hudson, P. L. | Cochran | Pulaski | 1889 |
| Hull, J. M. | Augusta | Richmond | 1882 |
| Hummell, George C. | Savannah | Chatham | 1884 |
| Humphries, W. C. | Acworth | Cobb | 1890 |
| Humphries, J. R. | Acworth | Cobb | 1876 |

| NAME. | POST OFFICE. | COUNTY. | ADMITTED. |
|---|---|---|---|
| Hurt, Charles D. | Columbus | Muscogee | 1890 |
| Huzza, Harry | Atlanta | Fulton | 1887 |
| Janes, J. W. | Atlanta | Fulton | 1879 |
| Jarnagin, W. C. | Atlanta | Fulton | 1882 |
| Jelks, N. P. | Hawkinsville | Pulaski | 1882 |
| Johnson, S. W. | Graham | Appling | 1888 |
| Johnson, J. C. | Macon | Bibb | 1875 |
| Johnson, Lindsay | Cartersville | Bartow | 1888 |
| Joiner, B. L. | Andersonville | Sumter | 1888 |
| Jones, L. H. | Clarkston | DeKalb | 1887 |
| Jones, Louis H. | Atlanta | Fulton | 1890 |
| Jones, L. M. | Milledgeville | Baldwin | 1880 |
| Jordan, F. M. | Hawkinsville | Pulaski | 1872 |
| Keaton, P. H. | Damascus | Early | 1889 |
| Kelley, J. M. | Griffin | Spalding | 1885 |
| Kelley, T. J. | Tennille | Washington | 1884 |
| Kendrick, W. S. (o.) | Atlanta | Fulton | 1874 |
| Kenan, Spalding | Darien | McIntosh | 1890 |
| Kennedy, L. B. | Atlanta | Fulton | 1890 |
| Lallerstedt, T. L. | Panola | DeKalb | 1868 |
| Lamb, Theodore | Augusta | Richmond | 1886 |
| Lancaster, J. F. | Flovilla | Butts | 1884 |
| Lane, E. W. (v.-p.) | Scarboro | Screven | 1885 |
| Lanier, Sidney J. | Guyton | Effingham | 1890 |
| Latimer, C. T. | Macon | Bibb | 1889 |
| Lawrence, L. L. | Blountsville | Jones | 1889 |
| LeHardy, J. C. (t., v-p., p.) | Savannah | Chatham | 1868 |
| Leyden, W. H. | Atlanta | Fulton | 1887 |
| Lind, E. G. | Savannah | Chatham | 1887 |
| Logan, A. J. | Americus | Sumter | 1882 |
| Love, T. D. | Atlanta | Fulton | 1887 |
| Love, Wm. Abram (v-p.) | Atlanta | Fulton | 1866 |
| Maloy, John K. | Temperance | Telfair | 1890 |
| Martin, John D. | Savannah | Chatham | 1867 |
| Mathis, A. A. | Macon | Bibb | 1872 |
| Mathews, S. S. | | | |

| NAME. | POST OFFICE. | COUNTY. | ADMITTED. |
|---|---|---|---|
| McDowell, J. M. | Barnesville | Pike | 1887 |
| McHatton, H. | Macon | Bibb | 1883 |
| McIntosh, T. M. (V-P.) | Thomasville | Thomas | 1874 |
| McMaster, H. B. | Waynesboro | Burke | 1888 |
| McMillan, J. E. | Albany | Dougherty | 1890 |
| McRae, F. W. | Atlanta | Fulton | 1887 |
| Medlock, J. B. | Austell | Douglas | 1888 |
| Miller, H. V. M. | Atlanta | Fulton | 1851 |
| Miller, J. Lindsey | Wrightsville | Johnson | 1889 |
| Moore, K. P. (V-P., O., T., P., S.) | Macon | Bibb | 1871 |
| Morgan, James B. | Augusta | Richmond | 1886 |
| Mogan, Y. H. | Cochran | Pulaski | 1889 |
| Mulligan, G. W. (V.-P.) | Washington | Wilkes | 1883 |
| Nicholson, W. P. | Atlanta | Fulton | 1883 |
| Noble, G. H. | Atlanta | Fulton | 1883 |
| North, A. G. | McDonough | Henry | 1887 |
| Nunn, R. J. (C., V.-P., P.) | Savannah | Chatham | 1867 |
| O'Daniel, M. H. (O., C.) | Milledgeville | Baldwin | 1882 |
| O'Daniel, William (T. P.) | Bullards | Twiggs | 1870 |
| O'Daniel, W. A. (O.) | Macon | Bibb | 1886 |
| Olmstead, J. C. | Atlanta | Fulton | 1886 |
| Parks, W. B. | Atlanta | Fulton | 1882 |
| Pendergrass, J. B. | Jefferson | Jackson | 1883 |
| Perdue, H. | Barnesville | Pike | 1889 |
| Perry, A. C. | Covington | Newton | 1878 |
| Phillips, S. Latimer | Savannah | Chatham | 1890 |
| Poole, W. H. | Douglasville | Douglas | 1883 |
| Ponder, W. P. | Forsyth | Monroe | 1885 |
| Pope. J. E. | Athens | Clarke | 1876 |
| Powell, T. O, (P.) | Milledgeville | Baldwin | 1867 |
| Powell, T. S. (V.-P.) | Atlanta | Fulton | 1857 |
| Quarterman, K. A. | Walthourville | Chatham | 1885 |
| Quillian, H. P. | Arp | Banks | 1888 |
| Ramsaur, D. H. | Rome | Floyd | 1888 |
| Read, J. B. | Savannah | Chatham | 1851 |

| NAME. | POST OFFICE. | COUNTY. | ADMITTED. |
|---|---|---|---|
| Richardson, C. H.. | Montezuma | Macon | 1886 |
| Richardson, E. H., Jr., (o., c., v.-p.) | Cedartown.. | Polk | 1878 |
| Ridley F. M.. | LaGrange | Troup | 1887 |
| Ridley, R. B... | Atlanta | Fulton | 1887 |
| Roberts, J. B., (v.-p.).. | Sandersville | Washington | 1875 |
| Rosser, W. A. | Bolingbroke | Monroe | 1884 |
| Rowland, A. A. | Brunswick | Glynn | 1890 |
| Roy, G. G. | Atlanta | Fulton | 1878 |
| Sample, C. L.. | Canooche | Emanuel | 1875 |
| Scott, H. F. (o.) | Atlanta | Fulton | 1879 |
| Seago, J. T. | Augusta | Richmond | 1885 |
| Selman, J. L.. | Douglasville | Douglas | 1882 |
| Shaw, T. M... | Coosa | Floyd.. | 1878 |
| Sibbett, W. F. | Broxton | Coffee.. | 1890 |
| Smith, A. A. (v.-p.) | Hawkinsville | Pulaski | 1875 |
| Smith, H. J... | Blackshear.. | Pierce | 1887 |
| Smith, J. B.... | Perry | Houston | 1870 |
| Solomon, J. C. | Flovilla | Butts.. | 1884 |
| Sorrels, R. P... | Danielsville | Jackson | 1887 |
| Spence, J. M. | Waresboro | Ware | 1890 |
| Spier, C. P. | Wadley | Jefferson | 1886 |
| Standifier, W. B.... | Blakely | Early | 1886 |
| Stevens, L. P. | Atlanta | Fulton | 1888 |
| Stirling, W. L. | Atlanta | Fulton | 1878 |
| Stockton, F. O. | Atlanta | Fulton | 1889 |
| Stone, George H... | Savannah... | Chatham | 1875 |
| Stovall, A. S. J... | Elberton | Elbert | 1886 |
| Strother, William A..... | Albany | Dougherty | 1873 |
| Tate, William B. | Tate | Pickens | 1890 |
| Taylor, A. P... | Thomasville | Thomas | 1873 |
| Taylor, J. P. | Haralson.... | Coweta | 1859 |
| Taylor, R. H. | Griffin | Spalding.... | 1879 |
| Thompson, P. H... | Bluffton | Clay | 1886 |
| Todd, J. S. (o., c., p.,) | Atlanta | Fulton | 1872 |
| Toole, J. A. | Macon | Bibb | 1889 |
| Tucker, O. W. | Brunswick | Glynn | 1890 |

| NAME. | POST OFFICE. | COUNTY. | ADMITTED. |
|---|---|---|---|
| Twitty, W. W. | Camilla | Mitchell | 1871 |
| Tye, R. L. | McDonough | Henry | 1887 |
| Usry, F. M. | Lombardy | McDuffie | 1886 |
| Van Goidtsnoven, E. | Atlanta | Fulton | 1887 |
| Wade, R. M. | Athens | Clarke | 1882 |
| Walker, F. | Macon | Bibb | 1889 |
| Walker, J. L. | Waycross | Ware | 1884 |
| Walker, T. D. | Cochran | Pulaski | 1882 |
| Watson, W. A. | Jefferson | Jackson | 1883 |
| Weaver, J. L. | Eatonton | Putnam | 1890 |
| Weichelsbaum, J. H. | Savannah | Chatham | 1884 |
| West, G. R. | Rome | Floyd | 1888 |
| Westmoreland, W. F. | Atlanta | Fulton | 1886 |
| Whitaker, J. M. | Milledgeville | Baldwin | 1881 |
| Whitehead, A. G. (v-P., P. | Waynesboro | Burke | 1869 |
| Whitley, T. R. | Douglasville | Douglas | 1882 |
| Wills, T. J. | Danielsville | Madison | 1889 |
| Williams, W. P. | Waycross | Ware | 1890 |
| Williams, H. J. (o.) | Macon | Bibb | 1883 |
| Wilcox, G. A. | Augusta | Richmond | 1886 |
| Wimberly, W. C. | Fort Gaines | Clay | 1890 |
| Winchester, W. R. | Macon | Bibb | 1889 |
| Winkler, George H. | Augusta | Richmond | 1886 |
| Word, R. C. | Atlanta | Fulton | 1855 |
| Wright, A. W. | Cave Spring | Floyd | 1879 |
| Wright, Thomas R. | Augusta | Richmond | 1880 |
| Yarbrough, W. F. | Oxford | Newton | 1887 |

## NON-RESIDENTS.

| | | | |
|---|---|---|---|
| Wells, W. B. | Chattanooga | Tennessee | 1873 |

## HONORARY LIST.

This list is designed for aged, retired or infirm members of the Association, who are entitled to all the privileges of the Association without payment of dues.

The Secretary would be obliged to members to report any names that should go on this list.

| NAME. | POST OFFICE. | COUNTY. | ADMITTED. |
|---|---|---|---|
| Alexander, J. F. (P. C., V. P.) | Atlanta | Fulton | 1849 |
| Boring, John M. (V. P.) | Atlanta | Fulton | 1856 |
| Coleman, J. T | Perry | Houston | 1851 |
| Browner, W. M. | Lexington | Oglethorpe | 1883 |
| Gaither, Henry | Oxford | Newton | 1851 |
| Hollingsworth, W. T. | Madison | Morgan | 1857 |
| Leitner, C. B. | Columbus | Muscogee | 1852 |
| Logan, J. P. (P.) | Atlanta | Fulton | 1858 |
| Steiner, H. H. | Augusta | Richmond | 1857 |

# In Memoriam.

☞SPECIAL REQUEST TO EVERY MEMBER.—The Secretary *earnestly requests each member of the Association* to aid him *in filling* THE BLANKS in the following Roll of Deceased Members *by making the necessary inquiries* in their respective cities and counties, *and writing him at once* on obtaining the desired information.

| NAME. | POST-OFFICE. | COUNTY. | ADMITTED. | DIED. |
|---|---|---|---|---|
| Adams, C. B. | Augusta | Richmond | 1868 | 1875 |
| Alexander, J. R. | Floyd | | 1849 | |
| Alfriend, E. W. (V-P.) | Albany | Dougherty | 1852 | 1886 |
| Arnold, R. D. (V-P., P.) | Savannah | Chatham | 1849 | 1876 |
| Ashworth, A. B. (S.) | Atlanta | Fulton | 1887 | 1889 |
| Avery, J. C. | Decatur | DeKalb | 1859 | 1873 |
| Ballinger, M. R. | Floyd Springs | Floyd | 1860 | 1886 |
| Banks, J. T, (V-P., P.) | Griffin | Spalding | 1858 | 1880 |
| Barkwell, T. J. | Hawkinsville | Pulaski | 1859 | |
| Battle, H. L. | Russellville | Monroe | 1849 | |
| Bell, T. W. | Busbyville | Houston | 1853 | |
| Bignon, H. A. | Augusta | Richmond | 1852 | 1870 |
| Billing, S. A. | Columbus | Muscogee | 1855 | 1872 |
| Bizzell, W. D. (V-P.) | Atlanta | Fulton | 1882 | 1890 |
| Black, R. C. (T.) | Augusta | Richmond | 1852 | 1860 |
| Bomar, B. F. | Atlanta | Fulton | 1859 | |
| Borcheim, L. E. | Atlanta | Fulton | 1886 | 1887 |
| Boswell, S. J. (V-P.) | Columbus | Muscogee | 1855 | |
| Bothwell, D. J. | Vienna | Dooly | 1849 | |
| Bozeman, J. F. | Atlanta | Fulton | 1855 | 1877 |
| Brandon, D. S. | Thomasville | Thomas | 1873 | 1878 |
| Broadhurst, W. W. | Augusta | Richmond | 1852 | 1861 |
| Bruce, R. J. | Thomasville | Thomas | 1874 | 1880 |
| Bunn, William | Wilna | Houston | 1854 | |
| Burgess, Wm. R. (T. O.) | Macon | Bibb | 1870 | 1878 |
| Burney, S. W. (P.) | | | | 1876 |

| NAME. | POST-OFFICE. | COUNTY. | ADMITTED. | DIED. |
|---|---|---|---|---|
| Campbell, Robert | Augusta | Richmond | 1849 | 1885 |
| Carroll, J. C. | Laurens Hill | Laurens | 1857 | 1870 |
| Carroll, R. C. | Augusta | Richmond | 1873 | 1882 |
| Castlen, F. G. | Macon | Bibb | 1867 | 1874 |
| Carlton, J. M. | Athens | Clarke | 1882 | 1883 |
| Charlton, T. J. (C.) | Savannah | Chatham | 1862 | 1886 |
| Charters, W. M. (P.) | Savannah | Chatham | 1851 | 1883 |
| Chase, D. S. | Augusta | Richmond | 1852 | |
| Clark, S. B. | Rich. Factory | Richmond | 1852 | |
| Coe, J. N. | Flat Rock | Pike | 1856 | |
| Colley, F. S. (P.) | Monroe | Walton | 1856 | |
| Cooper, G. F. (O., S., V-P.) | Americus | Sumter | 1849 | 1882 |
| Copeland, A. B. | Hamilton | Harris | 1878 | 1882 |
| Cornwall, G. H. | Hillsboro | Jasper | 1854 | |
| Crawford, S. S. | Augusta | Richmond | 1857 | |
| Crump, E. D. | Herndon | Burke | 1872 | 1881 |
| Cumming, H. M. | Augusta | Richmond | 1862 | 1887 |
| Cunningham, L. S. | Big Creek | Forsyth | 1859 | 1862 |
| Cunningham, W. D. | Jasper | Pickens | 1859 | 1866 |
| D'Alvigney, N. | Atlanta | Fulton | | 1877 |
| Davenport, C. W. | Point Peter | Oglethorpe | 1852 | |
| Davenport, H. S. | Calhoun | Gordon | 1859 | |
| Davis, W. L. | Albany | Dougherty | 1849 | |
| Dean, S. H. | Conyers | Rockdale | 1856 | |
| Dearing, W. E. | Augusta | Richmond | 1852 | 1867 |
| DeCortez, C. A. | Savannah | Chatham | 1872 | |
| Dickinson, J. T. | Albany | Dougherty | 1857 | |
| Dickinson, R. Q., (V-P., P.) | Albany | Dougherty | 1850 | |
| Dugas, L. A., (P.) | Augusta | Richmond | 1852 | 1884 |
| Dupree, L. J. | Camilla | Mitchell | | |
| Eve, Jos. A. | Augusta | Richmond | 1852 | 1886 |
| Eve, S. C. | Augusta | Richmond | 1868 | 1884 |
| Felder, W. L. | Augusta | Richmond | 1857 | 1867 |
| Fish, J. D. (T.) | Savannah | Chatham | 1875 | 1879 |
| Fitzgerald, E. | Macon | Bibb | 1882 | 1885 |
| Ford, L. D. (P.) | Augusta | Richmond | 1849 | 1884 |

| NAME. | POST-OFFICE. | COUNTY. | ADMITTED. | DIED. |
|---|---|---|---|---|
| Fort, Moses T. | Hawkinsville | Pulaski | 1859 | 1878 |
| Franklin, M. A. | Macon | Bibb | 1849 | 1858 |
| Frazier, W. M. | Hawkinsville | Pulaski | 1850 | |
| Gaither, B. T. | Oxford | Newton | 1852 | 1853 |
| Gardner, J. W. | Augusta | Richmond | 1857 | |
| Girardey, Edward | Augusta | Richmond | 1852 | 1859 |
| Gordon, J. M. | Savannah | Chatham | 1849 | |
| Gray, James A. (s.) | Atlanta | Fulton | 1882 | 1887 |
| Gray, S. H. | Barnesville | Pike | 1871 | 1885 |
| Green, A. B. | Pond Town | Sumter | 1849 | |
| Green, H. K. | Macon | Bibb | 1849 | 1867 |
| Green, Thomas F. | Milledgeville | Baldwin | 1849 | 1879 |
| Gregory, J. D. | | Sumter | 1849 | |
| Grimes, T. W. | Columbus | Muscogee | 1855 | 1882 |
| Habersham, J. C. | Savannah | Chatham | 1853 | |
| Habersham, J. C., Jr. (v-p.) | Savannah | Chatham | 1866 | 1881 |
| Habersham, S. E. | Eatonton | Putnam | 1870 | |
| Hammond, D. W. (v-p., c.) | Macon | Bibb | 1857 | 1887 |
| Harden, W. P. | Harmony Grove | Jackson | 1853 | 1885 |
| Harrell, W. J. | Bainbridge | Decatur | 1874 | 1881 |
| Harris, S. N. (v-p.) | Savannah | Chatham | 1851 | 1854 |
| Harrison, Gabriel | Macon | Bibb | | 1862 |
| Harris, Juriah (o., v-p.) | Savannah | Chatham | 1852 | 1876 |
| Havis, M. W. | Perry | Houston | 1854 | 1890 |
| Hart, A. C. | Waynesboro | Burke | 1852 | |
| Hawes, E. C. | Appling | Columbia | 1852 | |
| Heard, T. O. | Griffin | Spalding | 1867 | |
| Hendrick, J. B. | Covington | Newton | 1857 | 1881 |
| Henry, G. C. | West Point | Troup | 1872 | |
| Hook, E. B. | Augusta | Richmond | 1857 | 1862 |
| Hoxey, Thomas | Columbus | Muscogee | 1849 | 1853 |
| Hunter, E. H. W. | Louisville | Jefferson | 1857 | 1883 |
| Ingraham, E. P. | Albany | Dougherty | 1870 | 1873 |
| Irvine, Robert | Augusta | Richmond | 1880 | 1881 |
| Johnson, C. W. | Macon | Bibb | 1870 | 1875 |

| NAME. | POST-OFFICE. | COUNTY. | ADMITTED. | DIED. |
|---|---|---|---|---|
| Johnson, John M. | Atlanta | Fulton | 1866 | 1886 |
| Jones, B. O. | Atlanta | Fulton | | |
| Jones, J. W. | Atlanta | Fulton | 1857 | 1871 |
| Kennebrew, Henry | Athens | Clarke | 1883 | 1886 |
| Kirkscey, E. J. (V-P.) | Columbus | Muscogee | 1871 | 1877 |
| Kollock, P. M. (P.) | Savannah | Chatham | 1852 | 1872 |
| Lamar, T. R. (V-P.) | Macon | Bibb | 1849 | 1859 |
| Lightfoot, W. S. | Macon | Bibb | 1849 | 1864 |
| Lackhart, R. H. | Columbus | Muscogee | 1855 | 1859 |
| Lattimer, C. T. | Macon | Bibb | 1889 | 1889 |
| Long, Crawford W. | Athens | Clarke | 1849 | 1878 |
| Lumpkin, George | Maxey's Depot | Oglethorpe | 1859 | |
| Lumpkin, S. P. | Watkinsville | Clarke | 1859 | |
| Mackie, J. D. | Augusta | Richmond | 1852 | 1854 |
| Maffit, R. G. W. | Dalton | Whitfield | 1859 | |
| Mathews, W. B. | Fort Valley | Houston | 1884 | 1885 |
| McBride, W. G. | Oconee | Washington | 1850 | 1873 |
| McGolrick, R. | Macon | Bibb | 1849 | 1853 |
| McKinley, C. A. | Newnan | Coweta | 1859 | |
| McMillan, J. E. | Columbus | Muscogee | 1872 | 1883 |
| Means, A. (V-P.) | Oxford | Newton | 1851 | 1883 |
| Means, O. S. | Oxford | Newton | 1857 | |
| Meiere, William S. | Madison | Morgan | 1857 | |
| Milam, R. J. | Fairburn | Campbell | 1882 | 1882 |
| Morrison, D. H. | Savannah | Chatham | 1868 | 1869 |
| Musgrove, W. C. (C-S.) | Midville | Burke | 1849 | 1876 |
| Nash, R. A. | Marion | Twiggs | 1849 | |
| Nisbet, R. H. | Eatonton | Putnam | 1854 | 1873 |
| Nottingham, C. B. (S., T., C., P.) | Macon | Bibb | 1849 | 1875 |
| Nunn, R. M. | Savannah | Chatham | 1871 | 1873 |
| Ogilby, H. J. (V-P.) | Madison | Morgan | 1849 | 1873 |
| O'Keefe, D. C. (S.) | Atlanta | Fulton | 1852 | 1871 |
| Orme, L. H. (S.) | Atlanta | Fulton | 1866 | 1872 |
| O'Sullivan, —— | Cork | Lee | 1849 | |
| Owen, J. D. | | Baldwin | 1850 | |

| NAME. | POST-OFFICE. | COUNTY. | ADMITTED. | DIED. |
|---|---|---|---|---|
| Parsons, J. M. | Russellville | Monroe | 1845 | |
| Pitts, G. W. | Star | Butts | 1859 | |
| Posey, J. F. | Savannah | Chatham | 1851 | |
| Pringle, W. | Covington | Newton | | |
| Ragan, Isham H. | Palmyra | Lee | 1856 | |
| Raines, Thomas | Atlanta | Fulton | 1872 | 1883 |
| Raines, T. L. | Atlanta | Fulton | 1882 | 1884 |
| Rauschenberg, Christian | Atlanta | Fulton | 1861 | 1878 |
| Richardson, C. P. | Savannah | Chatham | 1851 | 1853 |
| Ridley, R. A. T. (V-P.) | LaGrange | Troup | 1859 | 1871 |
| Robertson, J. J. | Washington | Wilkes | 1852 | 1872 |
| Roddy, R. L. (V-P.) | Forsyth | Monroe | 1849 | 1878 |
| Ruffin, W. R. | Augusta | Richmond | 1852 | |
| Russell, W. J. | Lawrenceville | Gwinnett | 1861 | |
| Ryan, T. D. L. | Hawkinsville | Pulaski | 1859 | 1876 |
| Stafford, S. J. | Madison | Morgan | 1856 | 1859 |
| Searcy, D. B. | Bolingbroke | Monroe | 1849 | 1885 |
| Shropshire, J. W. | | | 1871 | |
| Simmons, J. N. | Atlanta | Fulton | 1850 | 1871 |
| Simmons, J. S. | Gainesville | Hall | 1873 | 1881 |
| Simmons, S. B. | Augusta | Richmond | 1852 | 1867 |
| Simmons, T. A. | Irwinton | Wilkinson | 1871 | 1872 |
| Smith, A. D. | Montezuma | Macon | 1871 | |
| Smith, C. W. | Jonesboro | Clayton | 1859 | |
| Smith, Hiram | Augusta | Richmond | 1876 | 1888 |
| Smith, H. H. | Augusta | Richmond | 1886 | 1887 |
| Smith, R. M. (c.) | Athens | Clarke | | 1879 |
| Smith, Thomas | Savannah | Chatham | 1858 | 1876 |
| Spier, W. A. | Grantville | Coweta | 1859 | |
| Stallings, J. D. | Preston | Webster | 1871 | |
| Stanford, F. A. | Columbus | Muscogee | 1849 | 1885 |
| Starr, E. P. | Savannah | Chatham | 1868 | 1873 |
| Steele, H. | Knoxville | Crawford | 1849 | |
| Steele, R. T. | Fairburn | Campbell | 1849 | |
| Stephens, W. B. | Forsyth | Monroe | 1849 | |
| Stewardson, Thomas | Savannah | Chatham | 1849 | |

| NAME. | POST-OFFICE. | COUNTY. | ADMITTED. | DIED. |
|---|---|---|---|---|
| Stozier, L. L. | Albany | Dougherty | 1867 | |
| Sutton, C. B. | | Lee | 1856 | |
| Taliaferro, V. H. (V-P.) | Atlanta | Fulton | 1857 | 1887 |
| Taylor, E. T. | Columbus | Muscogee | 1855 | |
| Taylor, R. N. | Hawkinsville | Pulaski | 1850 | |
| Thomas, J. G. (V-P., P., C., T.) | Savannah | Chatham | 1867 | 1885 |
| Thompson, Charles | Macon | Bibb | 1849 | 1854 |
| Trammell, A. A. | Forsyth | Monroe | 1856 | |
| Underwood, J. B. | Cave Spring | Floyd | 1860 | 1881 |
| Van Meter, J. N. | Euharlee | Bartow | 1879 | 1881 |
| Wall, W. W. | Calhoun | Gordon | 1860 | |
| Walker, T. F. | Cochran | Pulaski | 1859 | 1888 |
| Ware, A. E. O. | | | 1859 | |
| Waring, J. J. | Savannah | Chatham | 1853 | 1888 |
| Wells, C. H. | Savannah | Chatham | 1853 | 1854 |
| West, Charles (P.) | Perry | Houston | 1849 | |
| West, C. W. | Savannah | Chatham | 1853 | 1859 |
| Westmoreland, W. F. (P.) | Atlanta | Fulton | 1856 | 1890 |
| White, S. G. (V-P.) | Milledgeville | Baldwin | 1868 | 1877 |
| Whitlock, Isaac W. | Washington | Wilkes | 1852 | 1853 |
| Wile, Henry | Atlanta | Fulton | 1886 | 1887 |
| Wiley, J. B. | Macon | Bibb | 1849 | |
| Williams, T. L. | | Dooly | 1849 | |
| Williams, W. L. | Fayetteville | Fayette | 1873 | |
| Willingham, Willis | Lexington | Oglethorpe | 1849 | 1872 |
| Winn, G. A. | Bolingbroke | Monroe | 1849 | 1862 |
| Wirsen, G. F. | Rutledge | Morgan | 1871 | 1884 |
| Woodson, C. T. | Wilna | Houston | 1854 | |
| Wooten, W. H. | Lexington | Oglethorpe | 1852 | 1860 |
| Word, T. J. | Rome | Floyd | 1887 | 1890 |
| Wragg, J. A. | Savannah | Chatham | 1853 | |
| Wright, P. H. | Macon | Bibb | 1869 | 1888 |
| Yonge, Easton | Savannah | Chatham | 1880 | |